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A Systematic and Ecological Study
of Birds of New Guinea

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Figure 1. Map of the central highlands area mentioned in the text showing the Iloga and west Baliem valleys, the Bokindini and swart valleys and the missionary airstrips. The airstrips are omitted in the Baliem Valley. Note: An alternate spelling of Bokindini is Bokondini.

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A SYSTEMATIC AND ECOLOGICAL STUDY
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By S. DILLON RIPLEY

ABSTRACT

During two trips to West New Guinea in 1954 and 1960, the author made an extensive collection of birds as well as field notes in a variety of habitats ranging from the western islands adjacent to the coast of West New Guinea, the northern coastal areas from Sarmi to Hollandia (Kotabaru), and the mountains of the interior including a newly-opened valley, the Ilaga, in the Nassau Range. Some three hundred eighty-two forms of birds were observed during a four-month period. Descriptions of the habitats are given. In addition discussion is made of altitudinal shifts of range and the phenomenon of crowding and overlap of related species at feeding trees. At such feeding trees under compacted situations, high intensity calls and demonstrations of aggressive behavior occur.

Extensions of range are listed and data on breeding seasons are presented indicating overwhelmingly that similar species breed at two rather different seasons geographically, earlier in the calendar year in the central areas of West New Guinea, later in the calendar year in the western islands and west coast, presumably correlated with the weather and monsoonal seasons. In the species list a considerable number of field notes are included as well as native names and occasional native beliefs.

A SYSTEMATIC AND ECOLOGICAL STUDY OF BIRDS OF NEW GUINEA*

S. DILLON RIPLEY

INTRODUCTORY ACCOUNT AND ACKNOWLEDGMENTS

In 1954, my wife and I made a trip into the northern Moluccan islands of eastern Indonesia. For this journey I was the recipient of a Guggenheim Fellowship, as well as a grant from the National Science Foundation (no. B-664). In addition, I received a grant from the Vose Fund of the Explorer's Club of New York. In 1960, a further summer's field work in the then Netherlands New Guinea (now West Irian) was aided by a grant from the Penrose Fund of the American Philosophical Society. To all of these distinguished organizations I am most grateful for valued aid and support.

I am very grateful to the authorities of the American Museum of Natural History for permission to work with their collections. I have been in frequent consultation with Dr. Thomas Gilliard and Dr. A. L. Rand, co-authors of the New Guinea handbook, which will be published in 1964. I wish to thank Shirley Hartman for her help with two drawings and a map, as well as John Howard for photographic reproductions.

New Guinea, particularly that part known now as West Irian, formerly Netherlands New Guinea and the adjacent islands, is still not well known ornithologically although expeditions have been visiting the island and reporting on collections, essentially in a taxonomically descriptive sense, since the days of A. R. Wallace in the early Eighteen Fifties. However, many areas of this rich and strongly diversified habitat still remain unexplored faunistically. The latest large effort at biological exploration was that of the Archbold Expedition of the American Museum of Natural History of 1938-39, primarily into the previously unexplored highlands of the central mountain ranges near Mount Wilhelmina and the Baliem Valley. That expedition was a landmark of exploration in New Guinea, using an amphibian plane, vast numbers of porters, paramilitary assistance from the Netherlands authorities, and a staff of some seven scientists as well as assistants. Altogether a notable contribution was made to recording the fauna of the area. Several of the more important papers were published as "Results of the Archbold Expeditions," *Bull. Amer. Mus. Nat. Hist.*, and *Amer. Mus. Novitates*, various dates, primarily 1940-1942. Some three hundred and eighty forms of birds were observed and noted on that expedition.

In the 1954 trip, I was concerned with observations on species of birds of Malaysian or of Papuan affinity which might coexist in the interstitial habitats of the Moluccas. In addition, I was concerned with problems of competition between species. Unfortunately, various difficulties confront a European or American today in travelling in the Moluccas. The islands are not accessible by plane, and boat service is infrequent, the only current transport being the Indo-

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nesian government-run boats called Nocemo. Occasionally an official government vessel may make a tour of some of the islands. The capital of the North Moluccas is Ternate, where my friend, Alting Abid Din Shah, Sultan of Tidore, was at that time governor. The Kapala Daerah, his official title, was kindness itself, and our trip was really made feasible by his intervention and aid. Our gratitude to him and his wife is unending.

The fact that I had begun to speak the Indonesian language in 1937 on my first trip to New Guinea and its neighboring islands was of the greatest importance. Our subsequent travels would have been impossible without our knowing the local language. Food and equipment of all sorts is difficult in these outer islands, and our expedition was not aided by the unexplained disappearance of all the food we had purchased at premium prices in Java on the way out. Even rice is imported into these islands with difficulty from the Greater Sunda Islands and was always in threatened short supply.

We had initially planned to concentrate on Halmahera but this was made impossible by the activities of guerilla bands of the Dar 'ul Islam movement, with the result that we spent only a few days near Djailolo, making observations already reported upon (1959C). In the end we spent five weeks on Batjan, climbing Mount Sibela (6000 ft) in the process. This proved to be a difficult feat as even the inhabitants of Labuha, Batjan's capital, were unable to direct us to a route by which the only real mountain of the island could be ascended. A British botanist named Allston had recently preceded us and had been in the end foiled by a welter of misdirections. Our efforts were successful only when we abandoned our first route and proceeded to the bay of Waiaua from which deer-hunter trails climb up to the eastern hogback which forms one of the spurs of Sibela. Our work in the Moluccas, which had been sanctioned by the Museum Zoologicum Bogoriense, was greatly aided by one of their late mantris (assistants), Saän, who proved a loyal and devoted companion.

Our final month's work was spent on Misool, an island then in Dutch hands, to visit which we had to proceed via Makassar as a port of exit, to Dilli in Portuguese Timor and there catch the monthly KPM mail and cargo boat running from Singapore to New Guinea. In Sorong, which I had last visited in 1938, we were treated with the greatest consideration by the government officials from the Assistant Resident Mr. van Bodegom down, as well as by my old friend, Ong Tjoean, one of the chief Chinese merchants of the town. Here I was reunited with Jusup Khakiaj, an assistant who had worked for me and for the Academy of Natural Sciences from 1937 to 1939 and who had survived the last war totally unchanged except for gray hair. Jusup continued to work for me into 1955 collecting on Misool, Waigeu, the Ajoë Islands and Kofiau (1959B), and again in 1960 on our return. The month's work on Misool in 1954 was made notable by the discovery of four species of megapodes on the same small island, a fact of which I had not been aware during an earlier visit in 1937, nor had other naturalists ever come across these birds.

In 1960 my wife, three children and I returned to New Guinea for yet another session of field work in the Hollandia area. This visit was made possible by the generous cooperation of Dr. Victor de Bruijn, the Advisor to the Governor on tribal and Papuan affairs, and also with the aid of the Christian and Missionary Alliance and the Missionary Aviation Fellowship. The Netherlands government officials from the Governor, Dr. P. J. Platteel, on down, were all cordiality itself and our summer was made tolerable by the kindnesses shown to our children in the small Government Hotel at Dock V.

My first hope had been to continue studies of the megapodes, and we commenced operations by a field trip to the Tami River and later to Holtekong, both sites in the eastern reaches of Hollandia Bay, a vast complex of sub-bays, river mouths, tidal mangrove and beaches. The lateness of the season and the failure of my tape recording equipment as well as camera difficulties seriously impaired these observations. The lowland brush turkey, *Talegalla jobiensis*, in this area is heavily preyed upon by *Varanus* lizards who perhaps follow up human trails as well as locating the nest mounds on their own. Eggs that I attempted to keep under observation were stolen by "soa-soa," as these reptiles are called in Indonesian, and all I could do was make observations on nest mounds. The incessant rain and lack of adequate water-proofing were as much a hazard to mechanical equipment in the New Guinea lowlands in 1960 as they had ever been.

Our second visit was to a forestry development suggested to us by the Bureau for Economic Affairs. This was a lumber camp called Bodim, some 100 kilometers south of the north coast where the Tor River enters the sea east of Sarmi. We ascended the Tor for some 80 kilometers by double "prahu" powered by outboard motors to its junction with the Boe (Boefareh on some maps). Both rivers arise in the Gauttier and Foja Mountains. Some 20 kilometers up the Boe there is a small lumber depot and a trail leading 8 kilometers to the north into low foothills and dense stands of primary forest, dominated by dammar (*Agathis*) trees. Here we camped at an altitude of 300 feet above sea level for three weeks observing birds. Unfortunately the megapodes, said to be plentiful in the area, had been virtually wiped out by local hunting pressure due to the labor influx for the lumber work.

Our final visit was to the Ilaga valley, an extension of the east-west mountain valley system cradled in the Nassau range, just ten miles east northeast of the Carstenz peaks. The Ilaga river flows through this valley at an altitude of approximately 7000 feet above sea level, while cultivation of sweet potatoes, sugar cane, taro, potatoes, tomatoes and edible grasses extends up along the slopes to approximately 7700 feet, making this one of the highest cultivated areas in New Guinea. The population consists of about 6000 Western Danis and 2000 Uhundunis, the latter occupying villages on the southern slopes of the valley. The first outside contact with these people had been by missionaries in 1954, but it was not until 1956 that an invitation had come from the Danis for missionaries to enter the valley. The actual settlement by two missionary families, the Gordon Larsons and the Ellenbergers, had come two years later. Our stay in the valley would have been impossible without the generous welcome of these families and the two nurses, Miss Charlotte Schon and Miss Elizabeth Little, who had recently joined them. On the flight by Cessna monoplane up to the Ilaga, piloted by Miss Elizabeth Green, the remarkable Missionary Aviation Fellowship pilot, we were suddenly off-loaded due to a shutting down of the clouds in the mountains at a small strip, Bokindini, at 4500 feet altitude, where we were graciously put up for two nights by Mr. and Mrs. Garnet Erickson of the Australian Evangelical Mission until Miss Green could fly in again and take us on to the Ilaga. To all these kindly friends our thanks are due, and we often wonder, now that political events have changed the future of the Papuans so drastically, what their future will be in these strange mountains. During these travels we managed to make notes, observe and collect some three hundred and eighty-two forms of birds. Short publications on some of these species have already appeared in *Postilla* of the Peabody Museum, 1957 and 1959, as well as in the Proceedings of the XIIth Internat. Ornith. Congress, Helsinki, 1958, published in 1960. In addition, I have quoted from an

unpublished note by Philip Temple of the New Zealand New Guinea Expedition of 1961.

On the conclusion of our trip, Jusup Khakiaj stayed on in the New Guinea highlands in the Baliem Valley with members of the Harvard Peabody Museum anthropology expedition. His collection was made sporadically, during his spare time, but enabled us to secure a number of new records and additional species in the period up until early 1962, when the expedition was concluded. Subsequently Miss Denise O'Brien, a Yale graduate student in Anthropology, obtained some birds for us in the Swart Valley in 1962.

HABITATS

The lowland habitats of New Guinea where our work was undertaken consist of the dense closed forest on Misool, and similar areas along the Tami River in eastern Geelvink Bay. A good description of the beach, secondary and lowland forest associations is in Gibbs (1917) as well as the summary by Archbold, Rand and Brass (1942), and Lam (1945). Coastal forest consists of stands of mangrove, interspersed with casuarina along the beaches, and a wealth of *Pandanus* species inland on marshy, wet ground. Here and there, especially near Hollandia and round Lake Sentani, but also along the Tor river banks in the ox-bow bends, there are stands of grassland, *Imperata* or "lalang" and *Saccharum* as well as lesser sedges, grasses and ground orchids, *Spathoglottis*.

Inland along the meandering rivers and back from them as far inland as Bodim, we found ourselves essentially in climax evergreen forest. Along the banks of the Tami and Tor rivers, swampy species of trees occurred, breadfruits, *Artocarpus*, pandanus, *Hibiscus*, occasional pockets of enclosed marsh with sago palm, *Metroxylon*. The river edges also included occasional *Barringtonia*, *Timonius*, and *Syzygium*, which, with small *Ficus* species was alive with flocks of parrots and lorries in June and more particularly in July.

The high forest at Bodim was dominated by *Agathis*, *Polygonum*, *Intsia*, *Ficus* of many species and *Pittosporum*. Lower substage trees included *Eugenia* species, many palms including *Licuala*, (on whose leaves I found a nest of *Ptilinopus*) *Borassus*, *Cyrtostachys* and of course the climbing *Calamus* (associated with a nest of *Lonchura*) and *Korthalsia*. Here and there on the ridges above Bodim an occasional oak tree occurred, but we did not work in the mid-stage forests from 1500 feet up.

The Baliem valley and the Lower Ilaga valley are almost totally deforested. Here fields and grassland are interspersed with small areas of cut-over scrub. *Casuarina* trees dominate the landscape often near villages, and the low shrubbery consists of bracken, *Pteridium*, various rhododendrons, *Grevilea*, *Euphorbia*, *Vaccinium*, *Rubus*, ground orchids, grasses, *Saccharum*, *Pennisetum*, *Phragmites*, *Imperata*, and *Sorghum*. The cultivated plants in the Ilaga were sweet potato, pandanus, "sirih," taro, sugar cane, and recently introduced tomatoes and Irish potatoes. Gourds also are grown, *Lagenaria*, to be dried and used as penis sheaths.

In the upper Ilaga valley we penetrated into dense beech forest, *Nothofagus*, full of tree ferns, mosses and epiphytes, including more *Calamus* and climbing bamboos. At the higher levels above 9000 feet, we occasionally broke into open marshy flat areas of moorland, the floor of peat containing tussocks of sedge, *Gahnia*, and peat-stained streamlets and pools. Here there were edges of bracken fern, and low vacciniums and rhododendrons. The open areas of forest near these swampy patches were dominated by *Podocarpus* and occasional *Libocedrus*.

Above 9500 feet lies the heath and moor zone with low alpiners, peatmosses and a rich variety of epiphytes. This alpine zone forms an undulating plateau, uninhabited, but crisscrossed by overland trails running north and south to connect Uhunduni or Dani settlements, and east and west from the grand valley of the Baliem in the east, west to the feeder valleys of the Wissel Lakes.

ALTITUDINAL SHIFTS OF RANGE AND ECOLOGICAL OVERLAP AT FEEDING TREES

In mountainous tropical environments, related bird species are isolated from each other ecologically in a variety of interesting and effective ways. One of these is the rather strict stratification that occurs by altitude. Many authors have commented on the zonation of species in this manner, and Rand (1942) drew attention to the major or minor physical variations in size between populations of the same species or subspecies which could be observed while travelling upwards into the montane zones of New Guinea. Such physical differences could only mark the occurrence of genetic isolate populations in which any such change, or Bergmann-like effect, would be preserved. Everything that we have ever learned of ranges of birds in New Guinea tends to reinforce this general observation.

Occasionally, however, observations can be made of bird species wandering or temporarily shifting range. Some recent publications such as those of Slud (1960) have evinced cases of this kind in the New World tropics. Frith (1957) has published on feeding movements of pigeons in Australia, as has Smythies (1960) for Borneo. Chapin (1954) has mentioned altitudinal feeding movements of starlings, *Onychognathus*, on Mount Ruwenzori, as has Moreau to me (*in litt.*) on Mount Kenya, *Onychognathus* and *Poeoptera*.

Thus it was extremely interesting for me to come across cases where known highland species were entirely out of their normal range, competing for food with closely related, normally ecologically separated species.

The first case occurred on Batjan Island at Gandasuli, altitude 350 feet above sea level, during the period September 26-October 1. The local albizzia trees (*Albizzia molucca*) were in flower. Although *Myzomela obscura simplex*, the common lowland small honeyeater was normally in evidence in these trees, we also collected the similar-sized *Myzomela dibapha batjanensis* in the same single tree during the six-day period. Otherwise the highland honeyeater, *dibapha*, was found only on the Sibela ridge at 5000 feet and above.

Zosterops atriceps and *Dicaeum erythrothorax* were also feeding in the same tree, but in greatly reduced numbers. They were quiet and unobtrusive, *Dicaeum* making its ticking calls only as it left the tree in flight. However, the two *Myzomela* species were very noisy, making loud buzzing notes and calling incessantly, as I have described in an earlier paper (1959A). Whereas I pointed out in that paper that *obscura* was widely scattered at a low density over the lowlands of Batjan, and appeared to be highly aggressive when in contact with similar-sized sunbird species, here was an occasion where aggression was temporarily suspended for securing food. The result seemed to be achieved in a series of darts and dashes through the feeding tree, accompanied by noisy buzzings. In contrast to the silent yet intent behavior of feeding species of honeycreepers, *Diglossa* and *Conirostrum*, in competition with each other for food in the Ecuadorian Andes, described by Moynihan (1963), these species were very noisy. Constant movement and displacement, one individual by another, was the pattern, accompanied by advertising or warning notes. Moynihan notices the absence of overt short-range disputes between interspecific contacts. In contrast, I noted a high degree of activity with

frequent short chasings indicating overt aggression. This behavior parallels that observed in captive waterfowl (unpublished).

A second case occurred at Bodim on the Boe River where a cluster of three myrtaceous flowering trees attracted honeyeaters and lorikeets during the period July 29-August 2. Here *Myzomela eques primitiva* was the common lowland honeyeater, but we managed also to secure a single *Myzomela nigrata meyeri*, not common at all at this low altitude. Here also we found three species of lorikeets, *Charmosyna pulchella rothschildi*, *Charmosyna r. rubronotata* and *Charmosyna placentis ornata*, feeding in the same tree. Again, as on Batjan, we were attracted by the high intensity of buzzing calls and parakeet shrieks made by the birds as they fed on the nectar of the tree flowers. It was not continuous. The noise rose and fell as flocks of lorikeets left the tree or arrived, and it broke out at intervals as birds crowded together. There was considerable competition for perch space by from two to seven lorikeets at a time crowding onto a favorable feeding post. The honeyeaters, *Myzomela*, tended to dart about with buzzings and squeakings in the tree as much as they had been doing on Batjan. A few larger nectar-eating parrots also fed in the trees, but were not identified as well as two larger honeyeaters, *Xanthotis chrysolis* and *polygramma*. Competition within a micro-habitat seemed to be occurring between three species of lorikeets, one of which was collected several hundred miles west of its known range, and another of which, *Charmosyna pulchella*, is normally a more montane species (see later discussion, p. 31-32).

A third case is that of the two Alpine Lorikeets, *Neopsittacus musschenbroekii* and *N. pullicauda*, found in the same feeding trees in the Ilaga. Presumably these species have a wide overlap in altitudinal range between 2200-2800 meters (7250-9500 feet) where they coexist. The smaller sibling occupies the higher range.

EXTENSIONS OF RANGE

An additional subject concerns extensions of range. It seems obvious that peaceful conditions in the Baliem Valley and north at lower levels towards Archbold Lake have created new environments. Increased agriculture has resulted in new habitats for water birds and birds of open country, not previously collected above a few thousand feet. As in other tropical countries such as Ceylon (1946), changing habitats, the creation of plantations, and the destruction of forests allow these species to exploit new altitudinal ranges. The following species are here recorded from the Baliem valley or other highlands for the first time:

<i>Pelecanus conspicillatus</i>	<i>Columba vitiensis halmaheira</i>
<i>Hydranassa picata</i>	<i>Opopsitta d. diopthalma</i>
<i>Egretta alba modesta</i>	<i>Cacatua galerita triton</i> (Jalimo, Baliem?)
<i>Egretta intermedia plumifera</i>	<i>Halcyon s. sancta</i> (up to 7500 ft)
<i>Nycticorax caledonicus hilli</i>	<i>Aplonis cantoroides</i>
<i>Haliastur indus girrenera</i> (7500 ft)	<i>Monarcha rubiensis</i>
<i>Accipiter cirrhocephalus papuanus</i>	<i>Philemon novaeguineae jobiensis</i>
<i>Porphyrio poliocephalus melanotus</i>	

BREEDING SEASON

The following list includes all those bird species for which we obtained some evidence of a breeding cycle from gonadal activity of specimens dissected. Where a question mark follows the record it refers to the presumption of breeding from the fact that only males possessed enlarged gonads. In some cases only young

juvenile or nestling birds were collected. In other cases the only record is the notation made by my assistant, Khakiaj, on a specimen label, where I, myself, was not present at the time of dissection. The latter records refer essentially to March or April birds from the Baliem. In a number of cases males only showed enlarged testes and from the onset of moult we assumed that gonadal regression had set in and that actual nesting had just concluded. Here I have made an entry for the month to indicate some activity and an entry followed by a question mark to indicate the supposition that breeding had occurred in the preceding month.

The data following show conclusively that in the central areas of the island where we collected, Hollandia, Bodim and the mountains, the breeding season is in the southeast trade wind season, May to October, which is on average, the dry season with only thirty-six per cent of the annual rainfall. A few species give evidence of having two breeding seasons (two ducks, a megapode, two warblers, a thickhead, honeyeater, flowerpecker and white-eye). The evidence is inconclusive, but at least suggestive.

In contrast to this the western island breeding season of extreme western New Guinea, Sele Strait, Misool, Waigeu, Kofiao, etc., and one or two references to adjacent Batjan Island in the Moluccas, is overwhelmingly in the months October to January, namely the interim period between the end of the southeast trade wind season (which is rougher with more storms in the western islands like Misool) and the beginning of the rather uncertain northwest monsoon which traditionally begins in November, but often in the western area, does not become really rainy until February. Thus it would appear that most species have young well on the wing and are entering the completion of the moult cycle by the onset of the rainy season. The only exception appears to be the starlings in which breeding activity in the western areas apparently occurs as early as August (*Aplonis mysolensis*). Gyldenstolpe (1955B) records breeding starlings collected by Bergman in August and September. One of the rails also, *Gymnocrex plumbeiventris*, appears to breed as early as September. Otherwise the trend appears unmistakable.

- x = Central New Guinea,
i.e. Hollandia, Tami, Bodim,
Nassau, Baliem
= Western New Guinea, Arar,
Misool, Waigeu
o = Batjan

	J	F	M	A	M	J	J	A	S	O	N	D
<i>Podiceps ruficollis tricolor</i>					x	x				x		
<i>Dupetor flavicollis gouldi</i>								x	x			
<i>Threskiornis moluccas</i>												#
<i>Anas gibberifrons gracilis</i>										x		
<i>Anas superciliosa pelewensis</i>			x?	x?				x	x	x		
<i>Salvadorina waigeuensis</i>			x?	x?				x				
<i>Megapodius freycinet freycinet</i>										#	#	
<i>Megapodius freycinet affinis</i>										x		
<i>Megapodius wallacei</i>										#?	#?	
<i>Talegalla cuvieri</i>											#?	#?
<i>Talegalla j. jobiensis</i>					x?	x?				x?		
<i>Coturnix chinensis novaeguineae</i>						x?	x?			x		
<i>Rallus pectoralis captus</i>							x?	x	x			

x = Central New Guinea,
i.e. Hollandia, Tami, Bodim,
Nassau, Baliem
= Western New Guinea, Arar,
Misool, Waigeu
o = Batjan

	J	F	M	A	M	J	J	A	S	O	N	D
<i>Porzana tabuensis edwardi</i>						x?	x?					
<i>Poliolimnas cinereus minimus</i>							x?					
<i>Gymnocrex p. plumbeiventris</i>									#	#		
<i>Amaurornis olivaceus frankii</i>									o			
<i>Porphyrio poliocephalus melanotus</i>					x?							
<i>Irediparra gallinacea novae-guineae</i>				x?	x?							
<i>Sterna s. sumatrana</i>							x					
<i>Ptilinopus s. superbus</i>									x?			
<i>Ptilinopus pulchellus decorus</i>							x	x				
<i>Ptilinopus coronulatus trigeminus</i>	#?											#
<i>Ptilinopus coronulatus quadrigeminus</i>					x?	x?	x?	x				#
<i>Ptilinopus iozonus humeralis</i>	#											#
<i>Ptilinopus iozonus jobiensis</i>							x					
<i>Ptilinopus rivoli bellus</i>								x				
<i>Ptilinopus viridis salvadorii</i>								x				
<i>Ptilinopus aurantiifrons</i>							x					
<i>Megaloprepia magnifica septentrionalis</i>					x?	x?	x					
<i>Ducula m. myristicivora</i>												#
<i>Ducula bicolor</i>									o	o		
<i>Gymnophaps a. albertisii</i>									x			
<i>Reinwardtoena reinwardtsi griseotincta</i>										x	x	
<i>Henicophaps a. albifrons</i>							x					
<i>Gallicolumba r. rufigula</i>	#											#
<i>Gallicolumba r. septentrionalis</i>								x				
<i>Goura victoria beccarii</i>								x?				
<i>Chalcopsitta a. atra</i>												#
<i>Trichoglossus h. haematodus</i>												#
<i>Lorius l. lory</i>												#
<i>Lorius l. viridicrissalis</i>							x					
<i>Charmosyna papou goliathina</i>									x			
<i>Micrositta keiensis chloroxantha</i>									#?	#	#	
<i>Probosciger aterrimus goliath</i>												#
<i>Alisterus chloropterus moszkowskii</i>							x	x?				
<i>Psittacella lorentzi</i>									x			
<i>Cacomantis pyrrophanus excitus</i>									x			
<i>Cacomantis castaneiventris arfakianus</i>									x			#?
<i>Podargus papuensis</i>						x					#?	#?
<i>Podargus ocellatus</i>												#
<i>Caprimulgus macrurus schillmölleri</i>										o		
<i>Caprimulgus macrurus yorki</i>												x?
<i>Collocalia vanikorensis granti</i>							x?					
<i>Hemiprogne mystacea confirmata</i>									o			
<i>Alcyone azurea lessonii</i>												#?
<i>Merops philippinus salvadorii</i>								x				
<i>Aceros plicatus ruficollis</i>	#											
<i>Pitta erythrogaster macklotii</i>												#
<i>Pitta sordida novae-guineae</i>												#
<i>Cracticus c. cassicus</i>							x?					

J | F | M | A | M | J | J | A | S | O | N | D

x = Central New Guinea,
i.e. Hollandia, Tami, Bodim,
Nassau, Baliem
= Western New Guinea, Arar,
Misool, Waigeu
o = Batjan

	J	F	M	A	M	J	J	A	S	O	N	D
<i>Cracticus g. quoyi</i>									#?	#?	#	
<i>Oriolus szalayi</i>								x		x		#
<i>Dicrurus hottentotus carbonarius</i>											#	#
<i>Artamus maximus</i>								x	x			
<i>Aplonis cantoroides</i>							x	x				
<i>Aplonis m. mysolensis</i>								#?				
<i>Aplonis m. metallica</i>						x	x	#				
<i>Mino dumontii violaceus</i>							x	x				
<i>Corvus tristis</i>							x					
<i>Corvus o. orru</i>												#
<i>Loria l. loriae</i>							x?	x?				
<i>Macgregoria pulchra carolinae</i>								x?	x			
<i>Manucodia jobiensis rubiensis</i>						x						
<i>Ptiloris m. magnificus</i>								x				
<i>Seleucidis melanoleuca auripennis</i>								x				
<i>Drepanornis bruijnii</i>								x				
<i>Ciccinnurus regius similis</i>								x				
<i>Diphylloides magnificus chrysopterus</i>								x	x			
<i>Paradisea m. minor</i>						x	x					
<i>Paradisea m. pulchra</i>												#
<i>Archboldia p. papuensis</i>									x?			
<i>Chlamydera cerviniventris</i>										x		
<i>Coracina papuensis melanolora</i>										o		
<i>Lalage a. atrovirens</i>												#
<i>Crateroscelis robusta sanfordi</i>								x				
<i>Pomatostomus i. isidori</i>						x	x		x			#
<i>Saxicola caprata belensis</i>								x				
<i>Malurus alboscapulatus aida</i>						x	x			x		
<i>Todopsis c. cyanocephala</i>									#	#		#
<i>Clytomyias insignis oorti</i>							x?					
<i>Megalurus timoriensis macrurus</i>								x?	x			
<i>Cisticola exilis diminuta</i>								x?				
<i>Sericornis s. spilodera</i>								x?				
<i>Sericornis n. nouhuysi</i>											x?	
<i>Sericornis perspicillatus</i>								x	x			
<i>Sericornis papuensis bürgersi</i>								x?	x?			
<i>Gerygone cinerea</i>									x			
<i>Gerygone c. chrysogaster</i>								x?	x?			
<i>Gerygone chloronota cinereiceps</i>												#
<i>Gerygone magnirostris affinis</i>								x				
<i>Gerygone ruficollis insperata</i>							x?	x	x			
<i>Peltops montanus</i>								x?				
<i>Rhipidura t. threnothorax</i>						x	x					#
<i>Rhipidura r. rufidorsa</i>												#
<i>Rhipidura a. albolimbata</i>								x	x			#
<i>Rhipidura rufiventris gularis</i>								x				#
<i>Rhipidura leucophrys melaleuca</i>						x				o		
<i>Monarcha alecto chalybeocephalus</i>								x?				#

x = Central New Guinea,
i.e. Hollandia, Tami, Bodim,
Nassau, Baliem
= Western New Guinea, Arar,
Misool, Waigeu
o = Batjan

	J	F	M	A	M	J	J	A	S	O	N	D
<i>Monarcha guttula</i>						x	x	#			#	
<i>Monarcha chrysomela melanonotus</i>								#			#	
<i>Monarcha t. telescopthalmus</i>											#	
<i>Monarcha insularis</i>						x	x	x				
<i>Machaerirhynchus n. saturatus</i>								x				
<i>Microeca flavovirescens cuicui</i>								x				
<i>Microeca papuana</i>									x			
<i>Poecilodryas albonotata griseiventris</i>								x	x			
<i>Peneothello sigillatus quadrimaculatus</i>								x				
<i>Peneothello cyanus atricapilla</i>								x	x			
<i>Pachycephala pectoralis balim</i>											x?	
<i>Pachycephala schlegelii viridipectus</i>								x	x			
<i>Pachycephala lorentzi</i>								x				
<i>Myiolestes megarhynchus misoliensis</i>												#
<i>Myiolestes megarhynchus hybridus</i>							x					
<i>Pitohui kirhocephalus uropygialis</i>												#
<i>Pitohui kirhocephalus meyeri</i>						x	x					
<i>Pitohui ferrugineus heurni</i>							x					
<i>Nectarinea jugularis frenata</i>			#		#					x		
<i>Timeliopsis g. griseigula</i>							x	x				
<i>Glycichaera f. fallax</i>							x			x		
<i>Myzomela e. eques</i>												#
<i>Myzomela e. primitiva</i>							x?	x				
<i>Myzomela r. rosenbergii</i>					x?		x?	x	x			
<i>Toxorhamphus n. novae-guineae</i>							x?	x				#
<i>Toxorhamphus i. iliolophus</i>								x				
<i>Melipotes fumigatus goliathi</i>							x?	x				
<i>Melidectes nouhuysi</i>								x?	x			
<i>Xanthotis chrysotis meyeri</i>						x?	x					
<i>Xanthotis polygramma kuehni</i>												#
<i>Meliphaga aruensis sharpei</i>						x				x		#
<i>Meliphaga a. analoga</i>						#	x	x				#
<i>Ptiloprora perstriata lorentzi</i>								x?	x			
<i>Pycnopygius cinereus marmoratus</i>											x?	
<i>Philemon meyeri</i>							x?	x				
<i>Philemon n. novaeguineae</i>												#
<i>Philemon n. jobiensis</i>							x	x				
<i>Dicaeum pectorale</i>												#
<i>Dicaeum geelvinkianum centrale</i>									x			
<i>Melanocharis n. nigra</i>											#?	#
<i>Melanocharis n. unicolor</i>							x?	x	x			
<i>Paramythia montium alpinum</i>										x		
<i>Zosterops f. fuscicapilla</i>									x?	x?		
<i>Lonchura tristissima calaminoros</i>							x?	x				
<i>Lonchura spectabilis mayri</i>							x?	x?	x			
<i>Lonchura teerinki</i>									x?			
<i>Lonchura monticola</i>									x?	x		

J | F | M | A | M | J | J | A | S | O | N | D

LIST OF THE SPECIES

CASUARIIDAE, CASSOWARIES

Casuaris unappendiculatus philipi Rothschild

A fine adult of this species, the face and upper throat very blue, and with a high casque, was watched in damar forest at Bodim on July 28. The bird came quite silently out onto a trail, its slightly rocking gait as the head remains still and the neck carries back during each step, giving it an extremely dignified air. After perhaps three minutes pause on the trail, it apparently heard something and bounded off into heavy rattan-shrouded forest, as silently as a deer, only a faint crack or two marking its passing.

A chick perhaps eighteen inches high was purchased from Papuan villagers in July at Holtekong. The bird is beginning to get black feathers interspersed among the brown now in July a year later. Its color pattern corresponds exactly to that of a juvenile taken by me in West New Guinea in 1938.

In the Ilaga, the Western Dani and Uhunduni people believe that the few heavy wing quills of the mountain cassowary are breasts and that these birds suckle their young. They believe that there are no males among cassowaries, the females are parthenogenetic and produce eggs by copulating with a stick.

PODICIPEDIDAE, GREBES

Podiceps ruficollis tricolor (Gray)

A series of four specimens from Lake Sentani and the Baliem Valley seem identical with a female taken in northern Celebes in October in breeding condition. Two October males are similarly listed as having enlarged gonads. A single adult was solicitously protecting a brood of well-grown young on the lagoon lake at Mosso, July 2.

Wing ♂ 97, 97.5, 98, ♀ 96; soft parts: iris red, bill and feet blackish.

Podiceps novaehollandiae novaehollandiae (Stephens)

Rand (1942, p. 426) points out quite rightly that the Australian dabchick should be kept specifically separate from the Papuan *ruficollis* as it apparently overlaps. A series of four birds from Wamena and the Baliem River includes a juvenile specimen taken in February just moulting into the first winter or first basic plumage. The stripes are broken into isolated blackish feathers on the throat and sides of the neck. The crown is dull brown and the sides of the lower neck are rufous.

Wing ♂ 101, 107, ♀ 100, juv. ♀ 100.5; weight ♀ 200, juv. ♀ 207 grams. Mayr in Hartert (1930, p. 112) records a male of the Little dabchick (*tricolor*) from Lake Sentani, taken in September as weighing 165 g.

PELICANIDAE, PELICANS

Pelecanus conspicillatus Temminck

An Australian pelican was killed on the Ilaga River at an altitude of 6800 feet in early August, 1959, as it perched in a very large casuarina tree. The photograph of the bird taken by Mr. Larson was unequivocal. This is a first record for the highlands.

PHALACROCORACIDAE, CORMORANTS, ANHINGAS

Phalacrocorax melanoleucos melanoleucos (Vieillot)

Two specimens from Poe on Lake Sentani were taken in September and October.

A single bird was seen on the small lagoon lake at Mosso. The little pied cormorant also occurs in the Baliem.

Wing ♀ 239, ♂ 224.

Grand Valley Dani name, "waluem."

Anhinga rufa papua Rand

A pair in non-breeding condition were taken at Poe in October. The bill of these birds was given on the label as "orange," the legs "gray."

Wing ♂ 340, ♀ 330.

This species is shy, and specimens are hard to obtain. It is undoubtedly eagerly sought for as food by the fishing people of the lake.

ARDEIDAE, HERONS

Notophoxyx novaehollandiae auster, subsp. nov.

TYPE: ♂ ad. YPM no. 40708, collected March 2, 1961, at Wamena, 5000 feet, Baliem Valley, Netherlands New Guinea, by Jusup Khakiaj.

DIAGNOSIS: from typical *novaehollandiae* of Australia this form differs by being noticeably darker in tone on the crown of the head, in the coloration of the neck plumes especially on the lower neck and upper breast, on the flanks and thighs, and on the back and rump. From *nana* Amadon (1942A) of New Caledonia this form differs by being larger, as in *novaehollandiae*, and also of course darker.

MEASUREMENTS: wing ♂ 316 (worn), 324, 327, 328, 335, 340 (type), ♀ 320, 328, ♂ 300, 318 (worn), 327, 332, 334.

REMARKS: birds collected in February and March tended to have worn primaries, although this varies, as the type is in good condition. This series, all from the Baliem Valley agrees with birds taken by the Archbold Expedition of 1938 in the American Museum of Natural History collection in being noticeably dark. Birds from Papua and the southeast coast are also darker than Australian birds although less noticeably so. The large series taken by Khakiaj, however, demonstrates clearly that New Guinea birds are darker than those of Australia.

RANGE: New Guinea in the central mountains (Baliem Valley), the south and southeast.

GENERIC POSITION: Bock (1956) has united *Notophoxyx* with *Ardea* as he calls it a dwarf *Ardea* resembling especially *Ardea pacifica* in color patterns and plumes. While sympathetic to his attempt to point out the relationships of the heron family, I feel that *novaehollandiae* is very dwarfish indeed for an *Ardea* and that proportionally also its legs are rather short for that genus. It seems wiser to leave the species as monotypic for the time being in the genus *Notophoxyx* until some clearer anatomical evidence is forthcoming that it is as close to *Ardea* as assumed.

Grand Valley Dani name, "mugugo."

Hydranassa picata (Gould)

Two specimens, a male and female, were collected at Wamena in October and November, the first record for this lowland species in the Baliem Valley.

Wing 218, ♀ 220; culmen ♂ 59, ♀ 65.

Jusup, my assistant, has marked on the label that the local Grand Valley Dani name for this species is "wamena," a curious coincidence as the nearby village has a similar name. These small plumed herons might well be combined in *Hydranassa* as Bock (1956) has suggested.

Egretta alba modesta (Gray)

A pair were secured at Poe and a male at Wamena. This was the commonest species seen here and there in the lowlands wading in the large river shallows or on sand banks, or near the lake shore. The Wamena bird is a new record for the Baliem Valley.

Wing ♂ 353, 374, ♀ 371. Iris orange yellow, bill yellow.

Grand Valley Dani name, "gut."

Egretta intermedia plumifera (Gould)

Taken at Wamena this is a new record for the species at this altitude in New Guinea. March birds have long plumes.

Wing ♂ 291, ♀ 296, ♂ 302, 303. Iris orange yellow, bill yellow.

Egretta garzetta nigripes (Temminck)

A male from Poee has a wing measurement of 269. This species was also seen occasionally along the rivers.

Nycticorax caledonicus hilli Mathews

Adults were taken at Poee and in the Baliem Valley, a new altitude record for the species in New Guinea. A juvenile example was secured November 16 on Misool, evidently a bird of the preceding breeding season.

Wing ♂ 296, ♀ 296, ♂ 277, 295; soft parts: juvenile iris, yellow, ocular skin yellowish green, bill yellowish green, culmen and tomia black, feet yellowish green.

Zonodius heliosylus (Lesson)

A female in non-breeding condition was shot on a small tree overlooking a small swampy clearing at Bodim near the Tor River on July 27. I have seen this rare forest bittern only twice in New Guinea, both times in trees overlooking very small streams or forest pools. Soft parts: iris yellow, facial skin green, bill upper mandible black, lower mandible grayish flesh, feet blackish green, tarsus distally black, basally yellowish green.

Dupetor flavicollis gouldi (Bonaparte)

An adult, an immature and a juvenile just out of the nest were taken. The immature bird collected at Poee in October differs from the adult in being rather rusty brown on the upper surface, the wings being a paler grayish bluish rather than the blackish tone of the wings of the adult. The throat and neck feathers are heavily washed with dark brown with rufous and brownish rather than blue-black spotting. There is an indistinct chestnut brownish sub-ocular streak extending back to the ear coverts. The under surface is dull mauvish gray-brown, the ends of the feathers of the abdomen being dark isabelline. The thigh feathers are cinammon buff.

The nestling or post-nestling is very blackish on the upper surface and below brownish black, the feathers of the chin, throat and abdomen being finely edged with pale brown.

Soft parts (including the nestling): iris yellow, bill black, lower mandible greenish-brown, feet dark brown.

Wing ♂ 209, ♀ (im.) 215.

THRESKIORNITHIDAE, IBISES

Threskiornis moluccus moluccus (Cuvier)

A male was shot while incubating two white eggs in the crown of a coconut palm at Arar on Sele Strait on December 1. The bird had enlarged gonads. Unfortunately I did not realize that this bird was actually incubating when I destroyed it, as the nest, while distinguishable, was still of flimsy construction and appeared to me to be an incipient rather than a real nest. No mate was seen during our stay of nearly a week at the nearby village where we camped.

Soft parts: iris brown, bill black, facial skin and nape patches rosy pink, feet mauve, joints black, tarsi pink.

Wing 375, bill (culmen) 171.

ANATIDAE, DUCKS

Dendrocygna guttata Schlegel

A female taken at Poee in October was the only bird encountered. Wing 210.

Tadorna radjah radjah (Lesson)

Radjah Shelducks were present on the Tor River and on the Tami, usually seen in

small parties of five or six, perhaps adults and well-grown young of the year. A female was collected at Kabare on Waigeu in October; iris brown, bill and feet creamy white. Wing 287.

Anas gibberifrons gracilis Buller

Apparently common along the Baliem River near Wamena and the adjacent streams and lakes, the Gray Teal is apparently a breeding bird in the central highlands, as three males and one female taken in October are indicated as having enlarged gonads. Two of the males with enlarged gonads show heavy wear on the primaries, indicating that they are perhaps about to go into moult, the eclipse or pre-basic plumage so far as is known at present indistinguishable from the breeding plumage. An immature female was taken in October in the prebasic or juvenal plumage, marked by dappled small spots uniformly on the underparts.

Wing ♂ 200, 202, 207; ♀ 186 (im.) 193, 196 (2), ♀ 197, 201, 203.

Grand Valley Dani name, "walo-walo."

Anas superciliosa pelewensis Hartlaub and Finsch

Twelve males, five females and a number of birds of undetermined sex were taken on the Baliem River. February, March, August, September and October birds are listed as having enlarged gonads, an indication that nesting was in prospect. February specimens are in moult. In addition three September and October birds show heavy wear on the primaries and a third October specimen appears to have freshly moulted primaries which have shorter projecting tips beyond the ends of the secondaries than in the rest of the series.

Wing ♂ 231 (2), 233, 238, 239, 241, 244 (2), 245, ♀ 220, 222, ♀ 228, 227, 231, 233, 237, 238, 243.

Four immature birds were taken, all characterized by short wing measurements (under 220) and by having very broad buffy tips to the feathers of the abdomen. This would appear to be part of a prebasic or juvenal plumage and rather easily recognizable in museum skins, less so in live birds on the wing, although to the experienced eye such young birds often have an appearance of youth in their demeanor and flight. These young birds were taken in March and September. One young bird is extremely pale and washed out in appearance and heavily worn. A few darker feathers of the basic plumage are appearing spottily on the under surface from breast to vent.

Another small February female is also very worn and the undertail coverts and abdominal feathers are so fluffy as to indicate the downy quality of the juvenal. This bird is in juvenal plumage, and here again the breast and abdominal feathers are distinctive. The three types may be diagrammed as follows then in *Anas superciliosa pelewensis* (breast feathers only):

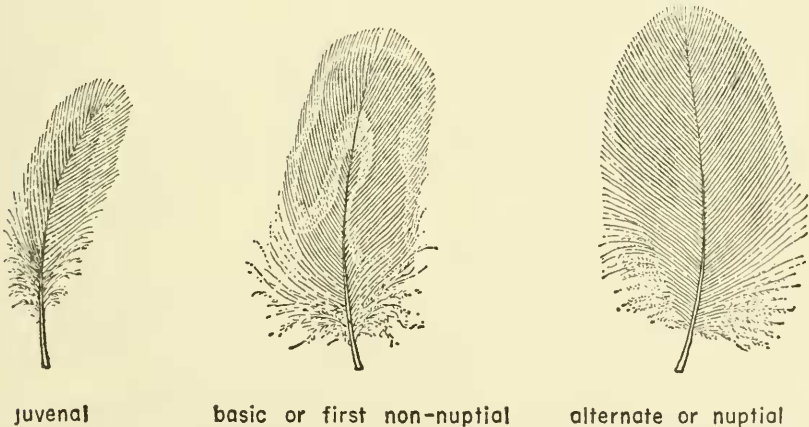


Figure 2. Contour feathers from three specimens of the Australian Gray Duck, *Anas superciliosa pelewensis*, showing juvenal, immature of the first year, and adult plumage.

An alternative feather pattern with a central V-shaped patch of buff is sketched as well. This appears to be a first basic or non-nuptial plumage bird of unknown sex. It corresponds to an eclipse bird of Kortright's description of the Black Duck (1942), but our North American Black Duck possesses this in the alternate or nuptial plumage, and the eclipse or basic plumage is plain black with the buffy fringing edge as in the adult alternate plumage of *pelewensis*.

This subspecies is much less broadly streaked and edged with buff than typical *rogersi* of Australia. Perhaps in *pelewensis* there is a tendency for the plumage to become more immaculate and less buffy with age and succeeding prealternate moults.

In connection with Amadon's review of this species (1942B) it is of interest to record that of two males from the Palau Archipelago, type locality of *pelewensis*, one has a weight of 692.5 grams. Unfortunately the wings of both birds which measure 227, 228, are badly worn (January, April).

Salvadorina waigeuensis Rothschild and Hartert

A female with ovaries granular in heavy wing moult was shot on the Ilaga River on September 9 and two ducklings were taken, both of which died after one or two days of efforts to keep them alive. The ducklings are dark, mousey-black color with white lores, superocular streaks, subauricular streaks, and white underparts. There are two pairs of white body spots and a white wing edging.

Soft parts of the ducklings are: iris brown, bill upper mandible blackish, nail and lower mandible pinkish, feet olive brown, splotched with dull yellow. Weight 30 g. Our adult female had the iris brown, bill upper mandible brownish orange, center of the upper mandible brown, feet splotched dull brown and yellow. Weight 520 g.

The rest of our series of these birds was taken at Wamena and on the Baliem. Males are listed as in breeding condition in February and March, and *contra* Delacour (1956), all have white-barred tails.

One immature bird in prebasic or juvenal plumage shows traces of down feathers still on the thighs and lower abdominal flanks. Even in this specimen the tail feathers are barred and indeed the upper plumage except for being somewhat "foxed" or more brownish blackish in tone is indistinguishable from the adult. However, round the face and neck prebasic warm brown feathers are being replaced by a prebasic moult into the first basic or first non-nuptial plumage of the adult. Until far more is known of these long-tailed birds it would seem unrealistic to submerge the genus *Salvadorina*.

Grand Valley Dani name, "kunuru." Western Dani, "uuni;" Uhunduni, "lakkum."

Aythya australis papuana, subsp. nov.

TYPE: ♂ ad. (YPM No. 40709), collected February 20, 1961 at Wamena, Baliem Valley, Netherlands New Guinea by Jusup Khakiaj.

DIAGNOSIS: from Australian *australis*, these birds differ by being darker, more chocolate chestnut on the head and neck, and much darker brown on the lower abdomen, vent, thighs and flanks. In size these populations are virtually the same, though there is an indication of slightly larger measurements in *australis australis*. From *extima* (specimens from Tana, New Hebrides and New Caledonia), this form differs by being larger and much darker, the males being pronouncedly sexually dimorphic, in contrast to the small tropical island population in which the male plumage has become dulled and diminished, more like an eclipse plumage as in the tropical gray teals, *gibberifrons*, or the small mallard of Hawaii, the "koloa," *wyvilliana*.

MEASUREMENTS: wing ♂ 209-220 (214.8), ♀ 209, 212; tail ♂ 57-60.5 (59.1), ♀ 55 (worn), 60; culmen ♂ 44-45 (45.5), ♀ 41-44. Measurements of type: wing 212.5, tail 59, culmen 44. Australian specimens in the American Museum and the Yale collections measure: wing ♂ 215-221 (218.7), ♀ 212-216; tail 60-69 (64.2), ♀ 60-65; culmen ♂ 45-49 (47), ♀ 42-48. Specimens of *extima* from Tana (♂, ♀) wing 201, New Caledonia ♀ 195 (worn). Mayr's birds from the Banks Is. (1910, p. 7) measured: ♂♂ 193-211, ♀ 189-196.

REMARKS: As Rand (1942, p. 431) noted, this breeding population of the New Guinea highlands is darker, more blackish, than the Australian one. In addition, it is slightly

smaller, and in breeding plumage, if anything, richer, more pleasing in chestnut tone, approaching Madagascan *innodata*, but much more blackish than typical small *A. nyroca* of the palearctic region. *Aythya australis ledeboeri* (Bartels and Franck) (1938) is identical and synonymous with typical *australis* in size and color, and represents a small straggling population of the Australian form of the White-eyed Pochard which extends into eastern Java, the lesser Sunda Islands and occasionally to Celebes, probably reinforced from time to time by vagrant Australian birds. The Netherlands New Guinea highlands, however, seem to be the home of a small resident population extending from Lake Habbema and the Baliem Valley west to the Wissell Lakes at altitudes of 5000 feet and above.

Birds are showing very worn scapulars in February and March. Our male type lacks the white spot on the chin normally found in all males of the Ferruginous ducks.

ACCIPITRIDAE, HAWKS

Aviceda subscristata waigeuensis Mayr

Two adult males and an immature male of this subspecies were taken at Kabare on Waigeu Island in September, 1955. The character of unbarred greater underwing coverts shows up clearly in these birds.

Henicopernis longicauda minimus Junge

A female (?) from Wasa, Misool, with a wing length of 331, confirms the small size of this insular race on Misool, although as Gyldenstolpe points out (1955B) Batanta Island birds are as large as those of mainland New Guinea. This specimen is below Junge's minimal measurements (1937) for males (338-340), and therefore is probably also a male.

Henicopernis longicauda longicauda (Garnot)

A male was taken August 18, 1963, in the Swart Valley. Wing 412. Swart Dani name, "ligatlok."

Haliastur indus girrenera (Vieillot)

Found by us from seashore to 7500 feet in the Ilaga, a new altitude record for this species. I collected an immature male in very worn plumage commencing the moult into adult plumage atop a huge casuarina in the Ilaga, September 2, 1960.

Western Dani name, "mokop."

Accipiter novaehollandiae leucosomus (Sharpe)

Waigeu, ♀ (= ♂ ?) wing 210, ♀ wing 250.

Holtekong, ♀ (subad.) wing 246.

Baliem including Kurelu, ♂ (= ♂) wing 216, 217, ♀ ♀ 243, 246.

The Waigeu Island birds are in the pale, more grayish coloration, while the Hollandia Bay and Baliem birds are in the slatey and chestnut underparts "*etorques*" coloration. There appears to be no altitudinal variation in size among our specimens. Only females appear to have any pronounced barring on the tail and I am inclined to feel that this is a character which disappears with age and succeeding moults.

The immature female taken at Holtekong in secondary scrub forest near cultivation had the following soft parts: iris yellow, bill black, cere orange yellow, feet orange yellow. Weight 439 grams.

A fledgling was taken in the Swart Valley in September.

Grand Valley Dani name, "pinté;" Swart Dani name, "penake."

Accipiter poliocephalus Gray

A single female from Misool is our only specimen of this species. Wing 213; iris brown, bill black, feet reddish.

Accipiter melanochlamys (Salvadori)

Two specimens, an adult female and an immature male, appear to bring to twenty-

three the total number of specimens now known of this rare species. Some twelve specimens have been in the American Museum collection in New York, five specimens in other museums abroad, and in the past twelve years two more have been added to the British Museum, two to the Royal Natural History Museum in Stockholm and these two at Yale.

Our adult female of this species from the Ilaga matches so well the description of typical *melanochlamys* that I am inclined to agree with Gyldenstolpe (1955A) on the questionability of accepting the race *schistacinus* Rothschild and Hartert. This female is dark glossy black above and deep rufous below and on the nape, matching the description of the Arfak type.

Our two specimens were taken in open cultivation and on the forest edge at 7500 and 8000 feet and measure as follows;

	wing (mm)	tail (mm)	culmen (mm)	weight (g)
♀	256	192	20	294
im. ♂	221	165	17	225

Soft parts: iris orange (♀), yellow (♂), eyelid yellow, bill (♀) black, base and lower mandible gray, cere orange yellow; (♂) bill upper mandible black, base and lower mandible gray, cere yellow, feet (♀) orange yellow, (♂) yellow.

Western Dani name, "Nabataranum."

The young male was hawking quietly through casuarinas and gardens, causing alarm among weavers and swamp warblers. His plumage is blackish on the head, the white bases and narrow margins showing through; an indistinct reddish sub-basal barring in the nape feathers, the back dark brown, paler on the tail with dark brown bars, below whitish (the thighs sandy brown with brown spots), one or two streaklets of black on the lower throat, the breast and abdomen strikingly dappled with black pear-shaped terminal droplets.

Accipiter cirrhocephalus papuanus (Rothschild and Hartert)

A male (?) was taken in the Baliem in November in subadult plumage. The wing measurement is 206 which seems large for a male.

Harpyopsis novaeguineae Salvadori

A male with unenlarged gonads was taken at Poeë near Hollandia on October 9, 1960. Wing 416, tail 368, culmen 48. Iris and legs orange, bill blackish, tip horn.

FALCONIDAE, FALCONS

Ieracidea berigora novaeguineae Meyer

Several specimens were taken in open country in the Ilaga, Swart and the Baliem. Males ranged in wing measurement size from 323-339 and females from 354-369. Specimens in very worn plumage were taken from August through October. One male weighed 489 grams.

A slow, sluggish falcon addicted to open edges of forest, cultivation and scrub. Swart Dani name, "ketek-ketek."

MEGAPODIIDAE, MEGAPODES

Megapodius freycinet freycinet Gaimard

Specimens of the small blackish form were taken on Waigeu and Misool as well as at Arar, a small village on an islet a hundred yards from the New Guinea mainland in Sele Strait between New Guinea and Salawati. Megapodes were in breeding condition and calling in October, and just going out of the breeding state in December. I watched a pair of this subspecies working through the forest floor, scratching for insects under the leaves like domestic fowl, keeping up a constant running commentary of small clucks and chuckles. Chicks were collected on Misool in the early part of the year in early January

indicating that they had hatched from eggs laid in October or November. A well-grown young bird in adult plumage was taken on Waigeu in September, presumably nearly a year old. Adults had soft parts: iris brown, facial skin dull red, bill blackish olive, tip olive, feet dark greenish olive. One female in breeding condition had the tip of the bill colored yellowish horn.

Megapodius freycinet affinis Meyer

A pair were taken on the Tami River and at Poee on Lake Sentani. The female taken in October is indicated as in breeding condition.

Wing ♂ 227, ♀ 222. Soft parts: iris brown, bill olive brown, facial skin dull red, legs black.

Megapodius wallacei Gray

As I reported previously (1960) we discovered Wallace's Megapode on Misool Island for the first record of this little-known species in the Papuan area. In identical size and proportion this species resembles *Megapodius* so closely that only the brighter banding on the wings and back, and white undertail coverts separate it from the other megapodes. It seems that these characters are too slight to require generic separation which has continued to date largely because no taxonomist has reviewed the status of this rare species. Our specimens, both males with slightly enlarged gonads, were taken at 300 and nearly 1000 feet above sea level. Soft parts: iris light brown, bill dull yellow, cere and base of lower mandible dark olive, feet blackish olive, legs anteriorly olive-black, posteriorly yellowish olive.

Talegalla cuvieri Lesson

Common in lowland forest at 300 feet above sea level on Misool. One female had granular ovaries in November. Soft parts: iris yellow, facial skin yellowish green, bill dull orange, feet yellowish orange. These birds fly heavily into trees when disturbed on the ground, at which time the bill and feet are noticeably bright in color. Bergman (1963) has made interesting observations on the young of this species.

Talegalla jobiensis jobiensis Meyer

Two females, one with ovaries granular were taken near Hollandia, the latter in late September. Two young, one just out of the egg, the other several weeks old, were taken on July 1 and July 29, the latter at Bodim on the upper Tor River east of Sarmi. Soft parts of adults: iris pale brown, facial skin reddish brown, bill upper mandible horny brown, lower pinkish horn, feet deep orange, nails orange whitish. Chicks, iris brown, (six-week old) dark brown, bill upper mandible brown, lower light brown, (six-week old) dark brown, feet brownish orange (six-week old) orange. Weight: chick 125 g, (six-week old) 292 g.

Of the two adults, the female from the Tami River has a wing measurement of 291 longer than typical *jobiensis* as given by Mayr (1938) and approaching *longicauda*. It is worth noting also that the nape feathers of this bird are chocolate brown rather than black.

This species was common on the Tami River in heavy evergreen forest. Its call "wankh-wankh" in an ascending scale, was frequent morning and evening, and presumably more common as egg laying was in progress. Several nest mounds were investigated, huge mounds of humus ranging from three to twelve feet in diameter, normally made by a single male and female, in one case a trio, rather than the more communal affairs of the megapodes. One egg removed from a nest on June 30 cracked open in my pocket and proved to contain a chick almost ready to hatch. The temperature of these nest mounds ranged from 89°-97° F. in the daylight hours. Many mounds had numerous holes in them said to be made by *Varanus*, the local monitor lizard, called "soa soa" in Malay. A roosting place of bush turkeys was found at Bodim. It was about 25 feet up in a large forest tree and the ground below was heavily littered with reddish droppings.

The embryos collected by us have been reported on by G. A. Clark (in press).

The following is quoted from a Mamberano report by Mr. van Eechoud ca. 1947: "The above photograph [see Plate II, p. 87] shows Sirikenas at the Moasets bivouac (560 meters above sea-level) with eggs of two kinds of large-leg hens (Megapodiidae). In this country said hens are sometimes called New Guinea forest turkeys. Presumably the hens belong to the *Talegalla* species, [*Talegalla jobiensis* and *Megapodius freycinet*].

On the photograph one can see clearly two kinds of eggs. This is because they are produced by two kinds of hens. The observer has not yet been able to investigate the difference in exterior, but there is a difference in sound as regards the way of calling or quacking. The sounds resembles "ngaak." The species producing white eggs does not occur in the lowlands. It lives in hilly territory and in the mountains. The species producing brown eggs is often found in the lowlands and up to heights of 500-600 m.

The manner in which the eggs are laid differs too. The white-egg producing hen lays her eggs in layers in the nest-heap (I wonder if nesthoop should be mesthoop which means *dung-hill*; *compost-heap*; tr.) Each layer is covered with humus and earth. The bottom layers are the oldest eggs and often rot.

The brown-egg producing kind is valued higher than the other kind by the population because when finding its nest one can collect a large number of eggs at once. Contrary to the brown-egg producing kind one should not leave any traces when approaching the nest of the white-egg producing hen; broken twigs, etc., around the nest make the bird shy and it leaves the spot, which is a disadvantage for the collectors of eggs. If no traces have been left one can very well visit such a nest regularly, for the bird lays an egg every day when once started. The brown-egg producing bird does not do this. Besides it is quite alright to cover the nest carelessly after the egg has been dug out.

If these birds occur in the vicinity of bivouacs or forest huts they are not killed or hunted by the population since the eggs bring in more than the meat."

Aepyodius arfakianus misoliensis Ripley

I have already recorded the existence of this large Bush Turkey on Misool Island (1957). This is a smaller form with slimmer bill than that found on the mainland of New Guinea in the mountains. Our specimens were taken by trappers at an altitude of 1000 feet, and the species is apparently exceedingly rare, which explains why naturalists have not run across specimens previously. Soft parts: iris tan, skin of loreal, superciliary and auricular areas greenish-yellow, crown and malar region greenish blue, submalar stripe light purple, neck wattle bluish white (once ♀, greenish), caruncle pinkish white, bill upper mandible olive horn, lower mandible creamy horn, feet dull yellowish-olive posteriorly, brownish olive anteriorly.

Arafura name, "gnok." Western Dani name, "alonga."

Although the Danis know the bush turkey, the Ilaga Valley was too high for it. Dani hunters reported it as occurring lower in the upper Rouffaer area.

PHASIANIDAE, QUAIL

Anurophasis monorthonyx van Oort

A single specimen was collected for us on the Kemabu plateau west of the Ilaga approaching the Carstenz peaks. This plateau is uninhabited and lies at about 12,000 feet. Small parties of these giant quail occur in the Nassau range on the plateau which must be traversed by the Danis to reach Homejo to the west or Pyramid and the Baliem on the east. The Western Danis occasionally manage to secure specimens of the "gimaabut" as they call the New Guinea alpine quail by shooting them with arrows. They find the birds a difficult quarry as they flush from close at hand with the characteristic burst of sound which so often puts a hunter off his guard.

♂ = ♀ Wing 158, tail 65, culmen 19.5, tarsus 43.

Bill yellow-green, feet straw yellow.

Except for the type in Leyden and the Archbold Expedition series in New York, this

is the only other specimen of this quail in museum collections and extends the range of the species west of the Oranje Mountains to the Nassau Mountains.

The carcass of this specimen is preserved in the Peabody Museum alcohol collection.

Coturnix chinensis novaeguineae (Rand)

Common in the Baliem, at Bokindini, and in the Ilaga, this diminutive quail can be flushed in the grassy meadows near cultivation and along the edges of the airstrips maintained by government officials and the missionary organizations. Males from the Ilaga seem very slightly darker above and more richly chestnut on the lower underparts than do topotypical *novaeguineae* specimens from the Baliem. Gyldenstolpe (1955 A, p. 31) refers to a single Wissel Lakes specimen taken by S. Bergman as also being rather darker than Wahgi Valley *novaeguineae*. Perhaps there is a slight cline in shades of color from east to west along the mountains in this species. Our series measures;

	Wing
Baliem ♂♂	62, 63, 67
Bokindini ♂	65
Ilaga ♂♂	65, 67

Iris brown, bill black, (one female, dark brown), feet orange yellow (male in breeding condition), yellowish-brown (males in non-breeding condition), yellow or dull brownish-yellow (females). Weight ♂ 39, ♀♀ 38, 43, 46 g.

Our male was in breeding condition September 12 and a female taken the same day had "ovaries granular." A chick was taken July 2 in the Baliem. Western Dani, "gimaaput," or "gila." Uhunduni name, "me wingam."

RALLIDAE, RAILS

Rallus pectoralis captus Mayr and Gilliard

We failed to see this species, all specimens of which were brought in to us by Danis or Uhundunis. A male had enlarged gonads August 20. Two immature birds were brought in in juvenal plumage, dark brown above, the head blackish, the back with indistinct blackish streaks, below similar to the adult but with no barring on the belly and no chestnut wash on the breast. The wings and flanks are barred as in the adult but the pale bars are creamy rather than whitish. There is an ill-defined isabelline wash on the undertail coverts.

	Wing	Culmen
♂♂	106, 107	34, 36
♀♀	98, 99, 104	29, 32, 32.5

I place these birds with *captus* Mayr and Gilliard (1951) with which they agree in being fairly large and dark. The single "female" from the Bele River taken by Rand and recorded by Mayr and Gilliard (*op. cit.* p. 2), is in fact a male, and I measure wing 97 instead of "96," culmen 37 instead of "33." The race *connectens* Junge from the Wissel Lakes seems to me to be a clinal intermediate, closely approaching *mayri* from the Vogelkop with which I would suggest it be synonymized.

Rallus philippensis wahgiensis Mayr and Gilliard

Junge (1953) has written extensively about the variations in this species. Three specimens collected by us at Bokindini in the area of the western Baliem and a fourth from the upper Rouffaer river are close to *australis* from Australia but darker, the chest band especially richer in tone. The feathers of the crown and back are more blackish as are the feathers of the lower underparts.

In color these birds are like *wahgiensis* Mayr and Gilliard and quite unlike their *randi*, also described in 1951. This is interesting in view of the position of *randi* northeast of Mount Wilhelmina and in the Lake Habbema area which is much nearer the range

of our Bokindini birds (within thirty nautical miles as the crow flies). However, *randi* was collected at 3225-3400 meters whereas Bokindini lies at 4200 feet or approximately 1300 meters. The paler *randi* with longer tarsus appears to represent an altitudinal race from the highest altitude in which the species has as yet been taken in New Guinea. The race *wahgiensis* appears to inhabit the mid-mountain altitudes from the Wahgi Valley in the Territory of New Guinea at about 5000 feet up to about 8000 feet, (although Gyldenstolpe (1955A, p. 33) notes that his higher altitude specimens show some variability) west to the western Baliem in the Bokindini area, and the upper Rouffaer River (Swart Valley).

Our birds at Bokindini were a common feature of the missionary gardens and the bushes, low grass and rivulets along the edges of the airstrip.

Western Dani name, "kumu." Swart Dani name, "jowan." Bokindini name, "iluwe."
Measurements: wing ♂ 135.5, ♀ 138.5, 144; culmen ♂ 28, ♀ 29.5, 32.

Porzana tabuensis edwardi Gyldenstolpe

A series from the Ilaga Valley fits Gyldenstolpe's description (1955A) of *edwardi* from the Wahgi Valley by being somewhat darker than typical *tabuensis* and thus definitely darker than *richardsoni*. The bills of our series are shorter than *edwardi* but definitely longer than the short-billed *richardsoni*, and thus nearer *edwardi*.

Measurements:

	culmen
<i>richardsoni</i> (Rand's measurements, 1940)	16-17
<i>edwardi</i> (Ilaga)	17-19.5 (mean 18.34)
<i>edwardi</i> (Gyldenstolpe's measurements, 1955 A)	17-22 (mean 19.02)
<i>edwardi</i> (Sims, 1956)	18-19
<i>tabuensis</i> (S. Pacific)	18-21.5

A number of subadult birds were taken in mid-August, the youngest of which is in dull juvenal plumage, the crown and back rusty brown, the throat whitish and underparts light grey spotted on the abdomen with paler gray. The legs are notably dull, dark brown rather than bright orange red. The rest of the younger birds are indistinguishable from the adults except for dull-colored legs and slightly shorter wings and bills.

Weights: ad. ♂ ♂ 50, 52, ad. ♀ ♀ 45-51, juv. ♂ ♀ 44-55 g.

This species occurred in the same marshy rank meadows as *pectoralis*, normally overgrown with rank grass or vines.

Swart Dani name, "kumalowanggwé."

Poliolimnas cinereus minimus (Schlegel)

A single male (wing 91.5) with slightly enlarged gonads was taken July 2 in a marshy lake near Mosso on the Tami River. These little rails flutter almost as agilely over lily pads as do the lily-trotters themselves. We noted them running rather freely over the vegetation of the lake in mid-morning. Soft parts: iris brown, eyelid red, bill olive horn, base reddish brown, feet yellowish green. Weight 60 g. Papuan name locally, "chincrauchi."

Rallacula rubra subrubra Rand

Three males mostly lacking the blackish wing patterns of the coverts, were brought in by Uhunduni trappers in the Ilaga, altitude 8000-10,700 feet. One male is in partial immature plumage with palish brown lower abdomen and vent lightly banded with buff and with an irregular sprinkling of white-streaked, blackish feathers on the wing coverts.

Measurements: ♂ ♂, wing 95 (2), 96; culmen 27 (3). Weight, 84, 88, 91 g.

Rallina tricolor tricolor Gray

A series of this handsome rail was taken on Misool Island in November as well as on the Tor River at Bodim. These are birds of heavy undergrowth, found in sago swamps

as well as in wet places on the forest floor. Measurements: wing ♂♂ 147-156, ♀♀ 143-151; weight ♂♂ 169 (August) 214, 231; ♀♀ 194, 200.

A subadult bird was collected by Khakiaj on Misool in October. It is lighter colored above and below than adults, the head with brown bases to the feathers which show through to give a nearly barred effect, the underparts, the throat and belly especially, much paler, the latter with pale creamy bars. The entire throat is cream colored, the newer feathers having brownish tips.

Gymnocrex plumbeiventris plumbeiventris (Gray)

This skulking and elusive rail of deep marshy forest has not been collected on Misool where we secured a pair, since the type of the species was taken by Wallace's assistant, Allen, over a hundred years ago. The female was in breeding condition with oviduct eggs on November 15, the male taken five days later, is in more worn plumage and has the paler, chestnut-tipped throat mentioned by Sharpe (1894) in some museum specimens.

The resemblance of this species to *Aramides* of Central and South America is striking. The underwing coverts and axillaries are more brightly barred with white tips to the slaty feathers. This is presumably a warning pattern as these rails are pugnacious and threaten each other with wings held in a raised position.

Soft parts: iris light brown, eyelid (♂) orange red, (♀) dull red, bill brownish olive, base of culmen, tomia and base of lower mandible greenish yellow or chartreuse color, feet and legs pinkish red. Altitude 300 feet above sea level. Wing ♂ 189, ♀ 188; culmen ♂ 50, ♀ 48; tail ♂ 77, ♀ 71.5, tarsus ♂ 57, ♀ 58.

Local Arafura (the people call themselves Bat Bat) name, "hoo," presumably an onomatopoeic attempt at one of the call notes of the bird.

Megacrex inepta pallida Rand

A single female of this stout-limbed rail, so large and powerful it appears in life like a miniature cassowary, was taken at Holtekong, across the bay to the east from Hollandia, the site where the two other specimens were taken by an Indonesian collector working for Mayr in August, 1928 (Hartert, 1930; Rand, 1938).

Measurements: wing 185, culmen (including shield) 79, tarsus 94. Soft parts: iris reddish brown, bill chartreuse, frontal shield blackish olive, feet dark brown, orange splotches on the upper leg, posterior base of nails white. Along the interior ramus of the maxilla from the internal nares to a point 23 mm from the tip is a narrow open suture-like channel brownish-black in color with several pink polyp-like structure, perhaps accessory sensory organs. The rest of the inner surface of the maxilla is bluish-gray. The tongue is horny and over one inch long.

This species which closely resembles a giant rufous-tailed moorhen, was apparently not uncommon in the mangrove forest which stretches south from Holtekong towards the Tami River. The mangroves here are large, up to sixty feet high, forming a dense canopy interspersed with palms, pandanus, casuarinas (often of immense size along the beach edges) and hardwoods. The "ferek" as one of its local Papuan names describes it, is found in the mangroves and perches at night several feet (usually above two feet) off the ground on tree branches. The rail has a harsh but shrill call, "aaah-aaah," not unlike the squealing of a baby pig. It is quite capable of taking care of itself even though flightless, being most powerful, kicking and stabbing sufficiently to frighten off the average dog and allow it to escape into the surrounding brush or up into the trees from branch to branch like a cat.

Amauornis olivaceus frankii (Schlegel)

The rufous-tailed moorhen is a shy creature found in heavy stands of grass and interspersed with bushes or banana stands near streams. Pairs usually have a perch in the bushes or banana clumps for the night and may often be trapped in this way. A female from Batjan with granular ovaries September 30, was taken in this manner. At Holtekong a pair lived in the long grass near our tent from which they called at dawn, a drawn-out mew like a cat in pain, "wee-youuu." The Holtekong male is much darker,

more slaty below and darker above than the Batjan female and inclines me to agree with Rand (1942) that *frankii* should be used to discriminate the north New Guinea population.

Indonesian name, "ayam ayamare," Papuan name (Hollandia), "namangié."

Measurements:

	wing	culmen	tarsus	middle toe (with claw)
Batjan ♀	136	29	51	54
Holtkong ♂	129	31	53	59

Soft parts: iris brown, bill (♂) yellowish green, culmen olive brown, (♀) green, culmen olive brown, shield light brown, feet (♂) yellowish brown, (♀) brownish yellow. Weight ♂ 182 g, ♀ 205 g.

Porphyrio poliocephalus melanotus Temminck

Three males, a female and three sex undetermined were collected by Khakiaj in the Baliem in February and March, 1961. One March male is labelled as being in breeding condition, thus agreeing with Rand's observation (1942). One male has pale fluffy feathers on the lower abdomen and vent indicating that it is subadult.

Wing ♂♂ 246-258, ♀ 235, ♀ 253-259. These birds are larger than *melanopterus* which occurs on the Idenburg River at low altitudes. It appears then that Australian *melanotus* is found in the mountains west to the Wissel Lakes (Junge, 1953) and Aimaroe Lake in the Vogelkop (Gyldenstolpe, 1955 B). These measurements range in the males from 246-275, and in females from 235-257. Rand (1942, p. 438) gives measurements of birds from Bernhard Camp on the Idenburg at 50 meters altitude above sea level as: ♂♂ 231-238, ♀♀ 221-230. These measurements agree with birds from the Moluccas and Ceram (type locality of *melanopterus*). Australian *melanotus* has a wing range from 265-281. There appears to be no other significant difference than size as Mayr (1938) has already pointed out. This is an unsatisfactory position but there is no real overlap in measurements.

JACANIDAE, JACANAS

Irediparra gallinacea novae-guineae (Ramsay)

An adult female and a subadult with brown head were taken. This lily-trotter or jacana was found on the small lake near Mosso on the Tami River.

Wing ♀ 132.5. Soft parts: iris light yellow, eyelid light blue, bill basally yellowish white, distally black, frontal shield pinkish yellow, feet and legs blue. The subadult (perhaps also a female) had: iris puce, bill, upper mandible flesh-color, lower basally white, distally fleshy-horn, feet bluish gray. Weight: subadult 110, ♀ 130 grams. Well-grown young indicated that there had been a nesting season within the previous two months.

CHARADRIIDAE, PLOVERS

Pluvialis dominica fulva (Gmelin)

Golden plover in winter plumage were taken along the Baliem River in October.

Charadrius leschenaultii leschenaultii Lesson

Collected on Waigeu Island by Khakiaj in September and October.

SCOLOPACIDAE, CURLEWS, SNIPE

Numenius phaeopus variegatus (Scopoli)

A pair were taken at Fafanlap on Misool in November, from whence this migrant curlew has not previously been recorded.

Tringa hypoleucos (Linnaeus)

Taken on Waigeu, Misool, the Schildpad Islands at Poeë on Lake Sentani and in the Baliem Valley from whence two February females are given weight measurements of 50 grams each.

Capella megala (Swinhoe)

Snipe were collected on Waigeu and one specimen comes from the Baliem in March.

Scolopax saturata rosenbergii Schlegel

Two specimens of the woodcock were taken in the Ilaga Valley at 8000-9000 feet. Both were brought in by hunters from heavy forest.

Measurements: ♀ wing 158, tail 64, culmen 98; weight 220 grams. The second specimen, sex undetermined, appears to be subadult, being smaller, the barring on the upperparts being heavier, more rufescent, the black areas of the feathers of the hind neck, nape and wing coverts of the adult being undefined, and the underparts being uniformly barred without the pale patch on the breast. Soft parts: iris brown, bill dark brown, feet grayish brown.

Dani name, "ibo."

PHALAROPODIDAE, PHALAROPES

Phalaropus lobatus (Linnaeus)

A single specimen was collected off Waigeu Island by Khakiaj.

LARIDAE, GULLS, TERNS

Chlidonias hybrida fluviatilis (Gould)

A series of whiskered terns was collected at Poeë on Lake Sentani in October. Some birds appear to be in first winter plumage with only an indication of black on the feathers of the hind crown and nape. Still other birds are in full adult breeding plumage while a third category appears to be changing into winter plumage.

These terns were commonly seen wheeling over the lake especially at the southeastern end.

Wing ♂♂ 218-230, ♀♀ 213-230. Soft parts: iris brown, bill red, feet dull red; immature differs by having the bill black.

Gelochelidon nilotica affinis (Horsfield)

Three Gull-billed Terns from Poeë on Lake Sentani prove to belong to the small form of the Sunda Islands and the Moluccas. This is a new record for this subspecies in New Guinea. A male and two females measure: wing ♂ 257, ♀ 255, 270, culmen ♂ 36, ♀ 33, 34. Two of the birds are beginning to lose the black caps of the breeding plumage. Soft parts: iris brown, bill black, feet black in the individual in breeding plumage, pale pinkish red in the two individuals assuming winter plumage.

These terns were associated with the smaller Whiskered Terns in mixed flocks on the lake.

Sterna sumatrana sumatrana Raffles

Found perched on rocky coral islets in Hollandia Bay in July. These birds presumably breed here as two females were in breeding condition though no eggs were seen on the dropping-covered rocks.

Sterna bergii cristatus (Stephens)

Crested Terns were common along the outer reefs along the north coast. No evidence of nesting was observed. Soft parts: ♂, iris dark brown, bill yellow, tip black, feet black.

COLUMBIDAE, PIGEONS

Ptilinopus superbus superbus (Temminck)

Females with somewhat enlarged ovaries were taken in September, near Hollandia and at heights ranging from sea level to some 4500 feet above sea level near Swart on the Konda River. The following weights were recorded: immature ♀, 88 g (July), ♀♀, ovaries granular or somewhat enlarged 120, 125 g.

Ptilinopus pulchellus pulchellus (Temminck)

Found from sea level to 300 feet altitude in light scrub as well as heavy forest, this seems to be a common species on Misool as well as along the northern coast of New Guinea. Wing ♂♂ 103-108. Soft parts: iris yellow, ocular skin yellow, bill yellow, feet purplish red. Weight ♂♂ 65, 81 g.

Ptilinopus pulchellus decorus Madarász

This subspecies has more pronounced pale edgings to the breast feathers to create a dappled effect of grayish white on the bluish gray breast. The undertail coverts appear paler, more yellowish. Otherwise this is a rather poorly marked subspecies. Wing ♂♂ 101-103. Weight ♂♂ 66, 67, 69, 70, 83 g.

A female was on a nest at Bodim in early August. The nest was fastened on the flat frond of a palm (*Licuala* sp.) and was loosely made of small twigs which were perilously attached to the palm frond by the surface roughness made by patches of moss and lichen growing on the frond. There was a single white egg.

Ptilinopus coronulatus trigeminus Salvadori

A pair were taken at Arar on Sele Strait in December. The female was coming into breeding condition as was the male. Wing ♂ 106, ♀ 105. Soft parts: iris orange yellow, eyelid yellow, bill yellowish green, feet purplish red. Weight ♂ 76, ♀ 71 g.

Ptilinopus coronulatus quadrigeminus Meyer

A poorly differentiated form. The throat of some of our specimens is very yellow. The purple stripe is present in virtually all of our specimens, and the brightness and extent of the yellow on the abdomen seem very variable. Lacking specimens of *geminus*, I am unable to compare the forms, but our series would cast doubt on the separate status of *quadrigeminus*.

Wing ♂♂ 103-106, ♀♀ 102-106; weight ♂♂ 75, 78; ♀ 81 g (breeding).

A female was in breeding condition at Bodim, August 3, while birds from Holtekong were going out of breeding condition and into moult.

Ptilinopus iozonus humeralis Wallace

A male from Arar in Sele Strait is coming into breeding condition in December. Wing 120. Iris white, bill greenish yellow, cere pinkish red, feet purplish red. Weight 132 g.

Ptilinopus iozonus jobiensis Schlegel

Three females were taken at Holtekong and Bodim. The Holtekong birds taken July 7 have slightly enlarged ovaries. The iris is yellow in these birds, bill olive green, nail greenish yellow, feet purple to purplish red. Weight ♀♀ 98, 100, 110 g.

Ptilinopus rivoli bellus Sclater

A male in breeding condition was taken August 10 on the upper plateau west of the Ilaga at 10,700 feet above sea level, slightly above the highest altitude recorded by Rand (1942) of 3225 m. This was unfortunately the only specimen secured. Wing 139. Western Dani name, "puume."

Ptilinopus viridis pectoralis (Wagler)

Common on Misool in heavy cut-over forest in the coastal areas. A female weighed 94 g.

Ptilinopus viridis salvadorii Rothschild

A male with gonads enlarged was taken at Bodim August 5. Iris, outer ring red, inner ring yellow, bill yellow, feet red.

Ptilinopus nanus minimus Stresemann and Paludan

Two males from Misool were taken in a very large fruiting tree. Wing 80.5, 81. Soft parts: iris inner ring gray, outer ring whitish, eyelid light bluish green, bill yellow, tip greenish; feet dull purple. Weight 46 g (2).

Ptilinopus aurantiifrons Gray

A male from Holtekong was in breeding condition July 6. Wing 132. Iris orange, eyelid yellow, bill yellow, cere red, feet purplish red. Weight 140 g. This beautiful pigeon was in a casuarina tree just at the beach edge.

Ptilinopus perlatus plumbeicollis A. B. Meyer

Two males and one sex undetermined were collected at Poe on Lake Sentani. Soft parts: iris red, feet red.

Megaloprepia magnifica puella Lesson

Found on Waigeu and Misool in January, February and September. Wing ♂ 158, 161, 166, ♀ 161.

Megaloprepia magnifica septentrionalis Meyer

This north New Guinea race has a brighter, clearer gray head, more yellowish wing spots and slightly duller, more olive-yellowish undertail coverts than is the case with specimens of *puella*. Birds from the Tami River were moulting in late June. Some enlargement of gonads was noted in July at Holtekong and Bodim. The Holtekong bird with slightly enlarged gonads (regressing?) is in very worn plumage, whereas the Bodim bird, July 29, is in fresh plumage and may be coming into breeding condition. An October female from Poe is immature, with greenish gray crown, and only traces of yellow wing spots. The lower breast is incompletely red, patched with blackish brown.

Wing ♂ 152-165, ♀ 152-167; weights ♂ 185, 195, 205 g, ♀ 152 g.

Ducula myristicivora myristicivora (Scopoli)

A breeding male was taken at Arar in Sele Strait just off mainland New Guinea on December 1. Wing 258. The growling call of these birds echoed throughout the tall mangroves and coconut palms.

Ducula bicolor (Scopoli)

A female was taken on Kamoia, Schildpad Is., north of Misool. This species was in breeding condition on Batjan and Halmahera in September and October.

Ducula pinon pinon (Quoy and Gaimard)

Three birds from Waigeu Island measure: wing ♂ 262, 273, ♀ 269. This form is duller colored than *jobiensis* and lacks the bluish gray wing edgings of the latter.

Ducula pinon jobiensis (Schlegel)

Common near the coast and also at Bodim though usually in very tall trees.

Soft parts: iris, inner ring orange, outer red, ocular skin red, bill basally black, (♂) dark gray, distally gray or (♂) light gray, feet cherry red, pads dull yellow. Wing ♂ 263-275, ♀ 273, 275.

Ducula rufigaster rufigaster (Quoy and Gaimard)

A female from Misool and a juvenile from Waigeu were taken in November and September 20 respectively. Soft parts: iris red, ocular skin red, bill black; feet cherry red. The juvenile is similar to the adult in color but small with a short tail. *Ducula basilica* of Batjan and the north Moluccas seems to me to be a rather different bird although it has been placed in the same species by such recent authors as van Bemmelen (1948). It is a highland bird not found below 2500 feet, much larger and rather different in appearance. The head, neck and breast are cream-colored rather than dark vinous buff, although the nape has a similar gray patch. The primaries and the wing coverts along the bend of the wing are rich purplish blue. The whole upper surface is green, not shading to a purplish-bronze rump and upper tail coverts and the tail has greenish tips beyond the wide gray band, which is much wider in itself than the terminal band of *rufigaster*. I would call these birds members of a superspecies rather than races of a species.

Ducula rufigaster uropygialis Stresemann and Paludan

Found on the Tami River, Hollandia Bay and at Bodim, usually singly in the forest. One female weighed 422 g.

Ducula zoeae (Lesson)

At Holtekong and on Lake Sentani these birds were common in tall trees. Three females measure: wing, 210-219.

Gymnophaps albertisii albertisii Salvadori

A female with granular ovaries was taken September 6 in the Ilaga; wing 202. Iris red, ocular skin bright red; bill upper mandible grayish white, lower mandible tipped with pinkish horn; cere pinkish red; feet cherry. Weight 245 g. Call, a soft cooing note, "kum kum" in the large subspecies *exsul* from Batjan. In the latter form the iris of an October male in breeding condition is: outer ring blue, inner ring orange; the bill upper mandible basally purplish red, distally pale horn, lower mandible gray, tipped with pinkish horn. Evidently the nasal area of the bill of a breeding male becomes brighter, more richly colored, and there may be a change in the iris color (?). Dani name, "juk;" Uhunduni, "mamoritum."

Columba vitiensis halmahera (Bonaparte)

A male found at 9000 feet in the Ilaga belies Rand's statement (1942, p. 443) that this species has a small altitudinal range. Another male was taken in the Baliem at 5000 feet and a young bird in the Swart at 4500 feet. Soft parts: iris orange, ocular skin and cere red, bill basally red, distally white, feet cherry red. Wing 226, 235. Weight (1) 449 g. Western Dani name, "inikiyappit;" Baliem, "iolmaik;" Swart name, "jukkola" or "kola."

Macropygia amboinensis doreya Bonaparte

Taken on Misool, Kofiau, Waigeu and Arar in Sele Strait, these birds had wing measurements of: ♂ 161-165, and were found at low altitudes. Weight ♂ 124 g.

Macropygia amboinensis kerstingi Reichenow

This subspecies of the north coast is similarly small; wing ♂ 164, 165.5 and weighs about the same; ♀ 122 g, but is paler below, closer to *batchianensis* which, however, is much larger.

Macropygia amboinensis balim Rand

A considerable series of this large altitudinal subspecies was taken by Khakiaj in the Baliem Valley evidently with gustatory forethought. In color these birds are surprisingly similar to far-away *batchianensis* though still larger in size;

	<i>balim</i>	<i>batchianensis</i>
wing ♂ ♂	172-184	169, 171

Unfortunately no notes or weights were taken of this form though I have a Western Dani name, "jokoik."

Macropygia nigrirostris nigrirostris Salvadori

A pair from the Baliem measure; wing ♂ 145, ♀ 142. Also called "jokoik" according to Khakiaj.

Reinwardtoena reinwardtsi griseotincta Hartert

A female from Waigeu is paler on the head showing a trend towards *reinwardtsi* of the Moluccas. Birds in breeding condition were taken in October and November. Sitting quietly at mid level in heavy forest these doves are very inconspicuous unless they fly or call, the latter a soft cooing note. Western Dani name, "koté," Ilaga Dani "jooku," Uhunduni "wilakkom."

Chalcophaps stephani stephani Pucheran

Taken on Misool and also at Sentani Lake. Weight ♀ 108, 130, im. ♀ 98, 104. Immature birds lacking the white forehead and duller above were taken from October to December.

Henicophaps albifrons albifrons Gray

Found only at Holtekong in heavy inland forest about 400 feet above the bay. A female on July 7 had an oviduct egg. Iris dark brown, bill brown, feet red. Weight 247 g.

Gallicolumba rufigula rufigula (Pucheran)

Three specimens from Misool Island are indistinguishable from typical *rufigula* of mainland New Guinea. They were taken in dense interior lowland forest in January, February and November, and a February male is marked as having enlarged gonads while a November female has granular ovaries. Soft parts: iris dull purple, ocular skin dull brownish purple, bill and cere basally dark purple, distally horn, feet purplish-blue, legs anteriorly purplish-blue, posteriorly purple. Wing ♂ 132, 133, ♀ 123; weight (♀) 141 g.

Gallicolumba rufigula septentrionalis Rand

Two males from Holtekong on Hollandia Bay exhibit the characters used by Rand in separating this subspecies. The wing edgings are slightly narrower, the crown more suffused with brown, and the gray areas on the head more confined to the superocular and auricular regions. These birds were found in heavy forest back from the bay at about 400 feet altitude. A nest of this species was found at Bodim August 4. It was a tiny cup 3½ inches in diameter made in a small bird's nest fern growing from the side of a sapling about nine feet above the ground in dense forest.

Goura cristata minor Schlegel

I have already (1959B) mentioned the Crowned Pigeons collected on Misool Island, which appear smaller than those from Waigeu, wing ♂ ♂ 327-335, ♀ ♀ 320, 324 against Waigeu ♂ ♂ 350-365, ♀ ♀ 318 (1), 333-353. It would appear that more material should be secured before a definite judgement is made, however. Color notes on a melanic Misool female, taken November 14, are: iris red, bill black, feet light purple, legs, scutes blackish-purple, integument white.

Goura victoria beccarii Salvadori

A pair of these magnificent Crowned Pigeons were collected in early July on the Tami River, the male in wing moult, the primaries well developed but in partial sheath. This bird is somewhat melanic, the lower abdomen being blackish and with blackish patches on the back. A pullus, not long out of the nest was taken at Poee October 10, the neck bare in a median patch from the chin to the lower throat, but otherwise with a small

crest and other adult-appearing plumage. The wings are fairly well developed though in partial sheath, and I would hazard that this is an eight-week old flying juvenile. Iris red, bill dark gray, distally white, feet pinkish red.

PSITTACIDAE, PARROTS

Chalcopsitta atra bernsteini Rosenberg

On the southeast coast of Misool there is an area of huge sugarloafs of eroded limestone rock. Just back of this between the small boat channel and Fafanlap in an area of highly leached, eroded soil, the stunted trees are widely spaced with open heath-like stretches of low bushes between them. Ground orchids were in flower and some of the trees were going into a brief deciduous phase adding to the color of the scene. Several flocks of the black lory flew from one to another of the small clumps of stunted trees, the only bird that we found in this depauperate-appearing area. A female had soft parts: iris light yellowish-brown, bill and feet black; wing 187; weight 260 g.

Chalcopsitta atra atra (Scopoli)

A male with enlarged gonads was taken December first in coconut palms at Arar in Sele Strait. Soft parts: iris outer ring reddish brown, inner ring yellow, bill and feet black. Wing 183.5. Wing moult present. Call, a high chitter, sounding like a parakeet of a third the size of this species.

Chalcopsitta duivenbodei duivenbodei (Dubois)

A pair were taken at Poe on Lake Sentani. Wing ♂ 171, ♀ 170.5.

Eos squamata squamata (Boddaert)

A male and two females were taken by Khakiaj on AJoe Island in coconut palms north of Waigeu. Wing ♂ 160, ♀ 150.5, 155.

Eos squamata attenua Ripley

The reduced violet nuchal collar of this form from the Schildpad Islands was remarked upon by Mayr and de Schauensee in their paper on western Papuan Island birds (1939B). A map in this paper (1939, p. 146) shows the location of these coral islets north of Misool and southwest of Salawati. I asked Jusup Khakiaj to return to Kamoia Island which he did in March, 1955, and collected two specimens, which have greatly reduced violet collars and rather bright underparts, particularly on the tail.

Wing ♂ 152, ♀ (type) 154.

Pseudeos fuscata incondita (Meyer)

Found from sea level to 5000 feet in the Baliem, all of our series appear to be in a uniform reddish-orange color phase. Flocks of this lory were common flying high over the trees on the Tami River, and circling among the groves of mangos and other ornamental fruiting trees near Ifaar on Lake Sentani.

Soft parts: iris orange, bill and surrounding facial skin orange, feet black. Wing ♂ 161-170; ♀ 156-162; weight (♀) 170 g.

None of these specimens show moult or gonadal activity. The musky body smell of this species is the most highly developed of any of the lorries.

Trichoglossus haematodus haematodus (Linnaeus)

A pair from Misool were taken in coconut palms in a village. Wing ♂ 141, ♀ 134; weight ♂ 119, ♀ 111 g. The male had slightly enlarged gonads in late November. The female has extremely broad black edges to the breast feathers.

Trichoglossus haematodus intermedius Rothschild and Hartert

A poorly defined subspecies. Of our five specimens from Bodim, the Swart Valley and Lake Sentani, one is indistinguishable from *haematodus*, the other three have less blue

on the forecrown and sides of the head. Wing ♂ 141-2, ♀ 136, ◊ 136. Weight ♂ 145, 149; ♀ 128. These birds which are not in breeding condition, or in moult, but were taken in July and August, are significantly heavier than typical *haematodus*. I have measurements of my specimens of *rosenbergii*, taken on Biak in November, December 1937 as: ♂ 102-119 g, much closer to *haematodus*, (Mayr and de Schauensee, 1939A). Western Dani name (Swart Valley) "ginin."

Lorius lory major Rothschild and Hartert

A pair from Waigeu are smaller than a male from Misool; wing ♂ 166, ♀ 156 versus the Misool male, 168, which does not support the larger size of this subspecies. There is probably considerable variation in these island birds. The other characters of blue hind neck and longer bill do not agree in these specimens either. It seems that this is a very poorly defined form on the basis of these skins.

Lorius lory lory (Linnaeus)

A male taken in November on Misool has slightly enlarged gonads. The second primary (from the outside) on one side and the first and second on the other are in sheath. Soft parts: iris yellow, bill orange-red, feet black. Weight, 245 g.

Lorius lory viridicrissalis de Beaufort

Of three males taken in early July on the Tami River, one is in breeding condition. None appear to be in moult. Soft parts: iris orange-yellow, bill orange, feet black. Weight 207, 209, and (gonads enlarged) 222 g. A single female had a yellow iris and weighed 163 g.

Charmosyna papou goliathina Rothschild and Hartert

Found in the Ilaga at 10,700 and 11,000 feet and in the Baliem at 5000 feet. As Rand has pointed out (1942, p. 447) the melanic birds are commoner at mid-montane altitudes, i.e. 5000 feet. Both Baliem specimens are blackish, while one Ilaga specimen is blackish and one wild-type. The four melanic males are not constant in plumage. One has a red spot below the eye and red undertail coverts in a solid black under plumage. One has a red patch on the belly. One has a red patch on the breast and red flanks.

One Ilaga male is in breeding condition September 5. Wing, 5 ♂ 138-148; weight ♂ 92 g.

Charmosyna josephinae josephinae (Finsch)

A dried skin mounted on a stick was bought from a Dani in the Swart Valley (upper Rouffaer River) by Miss Denise O'Brien in August, 1962. Western Dani name "luado." We failed to meet the species otherwise.

Charmosyna pulchella rothschildi (Hartert)

At Bodim at 300 feet altitude we found large flocks of this species feeding with *placentis* and many meliphagids in a cluster of three spreading flowering trees with large, rather rounded, slightly hairy leaves and clusters of pale pink flowers which looked very much like those of the "jambu," *Eugenia* sp. In this cluster, which we revisited daily, we collected meliphagids of two species and three species of lorikeets. Larger parakeets were also present, but we did not succeed in finding out the species to which they belonged.

None of these birds was in breeding condition although two females had ovaries slightly enlarged. One immature female was taken lacking the dark nape and the dark breast area and yellow shaft streaks.

Wing ♂ 96-99, ♀ 95-99.5. These measurements are slightly larger than those given by Rand (1942). Weight ♂ 34-46 g; ♀ 35-42; im ♀ 35 g.

This is normally a submontane species found above 2500 feet altitude.

Charmosyna rubronotata rubronotata (Wallace)

Three birds were taken at Bodim from the flowering trees on July 31. Wing ♂ 82

(moult), 88, ♀ 82. One male is showing moult round the ears and neck. Weight ♂♂ 34, 35; ♀ 31 g.

Charmosyna placentis ornata Mayr

A pair of this bright little lorikeet were taken at Arar on December 4. The male is showing head and wing covert moult. Wing ♀ 88. Weight ♂ 39, ♀ 40 g. This compares with a series of *intensior* from Batjan which weighed ♂♂ 35-39; ♀♀ 36-41 g, and *subplacens* from Bodim which weighed ♂♂ 38-48; ♀ 40-46 g.

Charmosyna placentis subplacens (Sclater)

A number of this form of the Beautiful Lorikeet were also taken in the same myrtaceous flowering tree as *pulchella* and *rubronotata* at Bodim. Their weights are listed in the paragraph above where it appears this subspecies is slightly heavier than *ornata* or *intensior*. It also appears slightly larger as wing measurements indicate: ♂♂ 85-96 (91), ♀♀ 88-92 (91). Twelve specimens were taken at the flowering trees in three days' collecting in contrast to other species:

	July 29	July 30	July 31
<i>Charmosyna pulchella</i>	—	5	6
“ <i>rubronotata</i>	—	—	3
“ <i>placensis</i>	2	5	5

All these three species of lorikeets are very close in size and weight and are presumably in competition in the lowland forest wherever they occur. It is even more provocative in this connection to find *placensis* occurring in the identical biotope in northern Netherlands New Guinea where previously only *rubronotata* had been found. However, of the three, *rubronotata* is apparently far less common as the experience of previous collectors will testify, (*vide* Rand, 1942). The race *p. subplacens* had not been previously found in northern New Guinea west of the Sepik River.

Oreopsittacus arfaki major Ogilvie-Grant

Found from 8000-12,000 feet above sea level in the Ilaga. These birds were commonly collected by Dani from trees in flower. Wing ♂♂ 82.5-89 (85.5), ♀♀ 83-86 (84.5); weight ♂♂ 19-22 (non-breeding); 20, 21, 26 (breeding); ♀♀ 19-24 g. Three males had enlarged gonads in early September. Soft parts: iris dark brown, bill black, feet blackish-gray.

Ilaga Dani name, “attugop” or “bep-beluwu;” Uhunduni “pee weet.”

Neopsittacus musschenbroekii medius Stresemann

Musschenbroek's Lorikeet was collected at 7500 feet in the Ilaga and lower down, at 5000 feet, in the Baliem. A juvenile male was collected August 25 in the Ilaga. The soft parts of this bird were dull, yellowish-orange iris and brownish-yellow bill, in contrast to the adult. The bright streaks about the eyes and cheeks are merely pale streaks in the green feathers, and only a sprinkling of breast and abdomen feathers have red edgings. Soft parts of adults: iris reddish-orange, bill yellow, feet gray.

A male taken August 19 is extremely worn but shows no sign of moult. The breast feathers are frayed, lacking red edgings, the nape is badly frayed and the wing and tail feathers are heavily worn. Presumably this bird has not long completed a nesting cycle.

Wing ♂♂ 116-123, ♀♀ 113-118; weight ♂♂ 50-55, ♀♀ 45, 47 g.

Neopsittacus pullicauda alpinus Ogilvie-Grant

This remarkably similar, almost sibling species to Musschenbroek's Lorikeet has been commonly called the alpine form of the former. It is smaller, more richly colored with a smaller bill, and was found by us from 7500 to 11,000 feet in the Ilaga.

Soft parts: iris orange, bill orange, tip yellow, feet dark gray. No birds were in breeding condition although one male had slightly enlarged gonads, and two others were very worn in late August. One or two birds, otherwise indistinguishable in size, were dully colored indicating perhaps that they were advanced juveniles.

Wing ♂♂ 98, 101 (juv. ?), 102-105; ♀♀ 97-103. Weight ♂♂ 30-38, ♀♀ 29-35 g (one worn female, perhaps a juvenile specimen, weighed 25 g). These birds are slightly smaller than the series taken by the Archbold Expedition (Rand, 1942).

Psittaculirostris edwardsii (Oustalet)

Two males, one adult, one juvenile were taken in the eastern Humboldt Bay area at Holtekong and on the Tami River. The young bird was collected July 10. The adult was one of a pair in an immense fig tree in the center of a Papuan garden near the river, feeding on the fruit along with flocks of starlings, an appropriate site for a fig parrot, so-called.

Soft parts: iris brown, bill black, feet greenish-gray. Wing ♂ 110; weight ♂ 118, juv. ♂ 92 g.

Opopsitta diophthalma diophthalma (Hombron and Jacquinot)

A male and two females were taken in the Baliem, at 5000 feet, far higher than ever before recorded for this species. Unfortunately I have no field notes except that the iris was brown, bill gray, feet gray. Wing ♂ 93, ♀ 93, 96. One female taken in mid-February is showing head moult.

Micropsitta keiensis chloroxantha Oberholser

Four males, a female, and a male pullus were taken on Misool in October and November. A November male had enlarged gonads. The pullus is covered with wisps of white down. Weight ♂♂ 12-14, ♀ 12 g.

Several times these little parrotlets were observed in small groups working their way up or around the bark of a flowering tree trunk, particularly figs, in the manner of tiny woodpeckers. They have a very high-pitched squeaking. Rand (1942) reports on the stomach contents of *M. bruijnii* as being a white paste, a similar observation to mine on *keiensis*, and concludes that they feed on a fungus.

Micropsitta pusio beccarii (Salvadori)

A female, taken on the Tami River in July weighed 15 g.

Probosciger aterrimus alecto (Temminck)

Two males from Waigeu have wing measurements of 349, 352 and a female from Misool 325. These are much smaller birds in all dimensions than the population of the adjacent mainland. Iredale (1956) has recently attempted to restrict the name *aterrimus* to the western Islands of New Guinea and place the name *alecto* in synonymy. As *aterrimus* had already been restricted long ago (van Oort, 1911) to northern Australia, it seems most unwise to attempt merely on supposition about the travels of early voyagers, to shift the type locality of "New Holland" as Mathews had also done in 1927.

Probosciger aterrimus goliath (Kuhl)

A single male with gonads slightly enlarged was taken in dense mangrove forest at Arar on Sele Strait December 4. Wing 391. These birds feed on the seeds of the "kanari" tree, *Canarium* sp.

Probosciger aterrimus stenolophus (van Oort)

Two females of this dark, lanceolate-crested form taken at Holtekong have wing measurements of 358, 385. The larger bird is in very worn plumage in late September.

Cacatua galerita triton Temminck

Collected on Misool, Waigeu and at Poeë on Lake Sentani. My own impression is that cockatoos are less common, far more local than in 1937-8 during my first visit to New Guinea. In the central highlands cockatoo feathers are much in demand and a small trade in them as well as in yellow flank plumes of the bird of paradise exists between the lowlands and highlands. These white feathers are confused in the Baliem valley by

the Dani people with those of the egret which occasionally visits the valley and lakes. Both types of feather are important to the Baliem Danis.

Grand Valley Dani name, "jagik," said to be found east in the Jalimo area of the Valley at about 4000 feet.

Lorius roratus pectoralis (P.L.S. Müller)

A uniform series of this common parrot was taken at low altitudes on Misool and Waigeu, and around Hollandia Bay. Occasional male specimens from the western islands have a tendency to a bluish suffusion on the nape and occiput.

Wing ♂ ♂ 249-269 (260), ♀ ♀ 235-252 (243).

Geoffroyus geoffroyi pucherani Souancé

A few specimens were taken in coastal trees on Misool, Waigeu and at Arar on Sele Strait. One male is in wing moult in March.

Wing ♂ ♂ 160, 168, ♀ ♀ 145, ♀ ♀ 150, 154 g.

By contrast a small series of *cyanicollis* from Batjan weight; ♂ ♂ 174, 188, ♀ ♀ 160, 184, 190, 222 g. The Batjan birds besides being larger (wing ♂ 174, 179, ♀ 170 (2), 178) and much heavier, also show a surprising variation in weight. The extremely heavy female (222 g) was the only specimen taken on Halmahera.

Geoffroyus geoffroyi minor Neumann

A small series was taken in the vicinity of Humboldt Bay. These specimens are small: wing ♂ 159, 164, ♀ 154 and a single weight ♂ 159 g is approximately less also. A male from Poe is coming into adult plumage in October, the brown of the head being invaded by blue on the occiput and pinkish red on the lores and cheeks.

Tanygnathus megalorhynchus megalorhynchus (Boddaert)

A female from Misool was taken in February and shows wing moult.

Alisterus chloropterus moszkowskii (Reichenow)

A series of this species were taken at Bodim, around Hollandia Bay and in the Baliem Valley near Wamena, higher than normally expected, although Rand (1942, p. 451) reports that it may be found to 1400 m altitude, and Gilliard and Lecroy (1961) record the species to 4500 feet near Telefomin.

Birds from along the north coast show small individual variation in the tones of the color of the back, as pointed out by Mayr in suppressing a subspecific name proposed by Neumann earlier. A subadult female from Poe on Lake Sentani has only the suggestion of paler edgings on the inner web of the inner median primary wing coverts, and the brighter inner lesser wing coverts of the shoulder are bright but hidden by the mantle. In contrast adult birds, presumably through successive moults, have a bright shining patch of greenish yellow throughout the median primary and secondary coverts.

A male from Bodim showed slight gonadal enlargement on the 29th of July. A juvenile male was taken at Holtekong September 25. The bird has greenish feathers on the lores and the breast feathers have brownish green bases which show through the adjacent red tips to give a banded effect.

Soft parts: iris (♂) red, (♀) orange; bill, upper mandible (♂) red, tip black, (♀) basally orange, distally black; lower mandible black; feet (♂) black, (♀) blackish-gray. Wing ♂ ♂ 179, 183, 185; ♀ 182-184 (5). Weight ♂ 138, 157; ♀ 146, 162 (2), g.

Psittacella brehmii intermixta Hartert

Brehm's Ground Parrot was a sluggish inhabitant of the deep podocarpus and beech forests on the hill sides above the Ilaga Valley. Although others have observed members of the *Psittacella* group on the ground in forest glades, I have not been as lucky. Our specimens include a male, a young bird, with incompletely ossified skull, which has a plain olive-green breast with a few banded feathers scattered through the lower breast, abdomen and flanks. The scarlet under tail coverts also have terminal black edges with

a single subterminal narrow yellow bar. Otherwise the coloration of bill, head, back, tail, etc. is similar to the adult. This agrees more with Hartert's statement (1930, p. 107) *contra* Rand (1942, p. 452).

Soft parts: iris ♂ yellow, ♀ brown, bill ♂ bluish gray, ♀ basally gray, distally dull yellow; feet ♂ blackish gray, ♀ dull, dark gray. Wing ♂ 134, ♀ 129-131; weight ♂ 118, ♀ 115, 120 g.

Psittacella lorentzi van Oort

A male in breeding condition September 5 and five females were collected in the Ilaga at altitudes ranging up to 11,000 feet. This inconspicuous little ground parrot occupies the same jungle habitat as its larger congener. Soft parts: iris brown (yellow in two females); bill, ♂ basally blue, tip grayish white, ♀ bluish gray; feet blackish gray, (brownish black in two females; *not* those with yellow irides). I am at a loss to determine why two specimens had yellow irides. The male and one female have a slightly bronzy cast to the feathers of the crown. This is a good species and stands by itself as Rand (1942, p. 452) points out.

Wing ♂ 110, ♀ ♀ 107-112.5; weight ♀ ♀ 52, 55, 58, 60 g.

CUCULIDAE, CUCKOOS

Cuculus saturatus saturatus Blyth

A September male from Waigeu of this migrant has already been recorded by me (1959, p. 15). The bird has a wing measurement of 187.5.

Cacomantis variolosus infaustus Cabanis and Heine

A series from Misool, Kofiau east as far as the Baliem and Lake Sentani area are relatively uniform in being rather dark gray below.

Wing ♂ 120, 125; ♀ 117, 120; ♂ 116-121.*

Swart Dani name, "pijara."

Cacomantis pyrrophanus excitus Rothschild and Hartert

Taken in the Baliem and the Ilaga in varying states of plumage. A juvenile male just out of the nest was collected in the Ilaga September 10, the upper plumage dark brown with traces of terminal barring, the underparts heavily barred. Several specimens are moulting from the barred subadult into adult plumage in August, a state which may imply that the juvenal barred plumage is retained for nearly a year. The barring is replaced with solid colored feathers on the breast and abdomen in a patchy, random manner. Gray feathers appear on the throat commencing at the chin, and dark slaty-blue feathers invade the crown, mantle and greater primary and secondary coverts. At the same time the very worn brown-notched rectrices are being replaced with white-notched rectrices. Two juveniles, one a nestling (September 30) were taken which are in completely barred plumage above and below. The barring of the lower parts is much paler than in the second barred plumage of the subadult. Evidently the nestling plumage with bars on the upper parts is moulted after a few months into a subadult plumage of darker barring below and the gradual reduction of barring above. Present evidence would indicate a full year for the production of these two immature stages with their accompanying moults.

Wing ♂ 138, 139; ♀ 136, 140, 142; ♂ 138-144 (143). Weight ♂ 45, 46, 50; ♀ 52 g. Soft parts: iris brown, eyelid yellow; bill black, gape orange; feet brownish yellow, olive brown (subadult).

Cacomantis castaneiventris arfakianus Salvadori

Two adult males were collected at Bodim and on the Tami River. The Bodim male,

* It is worth recording that we secured a single specimen of the rare *Cacomantis heinrichi* Stresemann on Batjan Island. The male was in breeding condition in early October, had a wing measurement of 112, and weighed 32 g.

collected August 6, with gonads slightly enlarged, was sitting on the very top of a giant isolated tree in a cleared area of trail. It was calling a ventriloquial note "tew" on an ascending scale which sounded as if it were a small babbler or other skulker deep in the fallen underbrush near the base of the tree. The persistence of the call and some minutes of reorientation finally persuaded me to locate the source of the noise (not unlike the repetitive call of an American Cardinal, *Richmondena*) some one hundred feet over my head.

Soft parts: iris dark brown, dull yellow (Tami River), ocular skin yellow; bill dark brown, gape yellow; feet yellow (δ testes not enlarged), orange (δ testes slightly enlarged).

Cacomantis castaneiventris arfakianus \cong *weiskei*

An immature male with a wing measurement of 109 was taken in the Baliem. The dark underparts seem to place this highland bird with the form *weiskei* from southeast New Guinea, as it lacks the pale mid-abdomen of young of *arfakianus*. In size it belongs, however, with the latter form.

Chalcites ruficollis (Salvadori)

A male from the Ilaga was taken at 7500 feet.

Wing 94; weight 21 g.

Rhamphomantis megarhynchus megarhynchus (Gray)

A single male was taken near Tamulol, interior Misool, by me out of a large evergreen forest tree. It is in the immature plumage of the genus, rather plainly marked below with gray throat, sooty-buff breast and creamy brown lower breast, unflecked with the fine, regular cross-barring of "dusky ash" (Shelley, 1891), or "feiner unregelmässiger schwarzbrauner Querbänderung" (Stresemann and Paludan, 1932). In this plumage it agrees well with a specimen in the American Museum of Natural History collection (no. 268532) from Passim, southwest coast of Geelvink Bay, collected by A. B. Meyer, although it is much darker, more olivaceous brown on the upper parts. From this specimen it is, however, markedly different in its small proportions, short wing, tail and minute bill and small feet. In shape, however, the soft yellow gape and the exaggerated angle of the gonys of the mandible posterior to the myxa, reveal this to be an immature bird, perhaps not long out of the nest, though with wings and tail fully developed. It is conceivable, therefore, that this specimen could represent either a new small resident subspecific population from Misool, or when adult, could approximate the size of other known specimens from the New Guinea mainland.

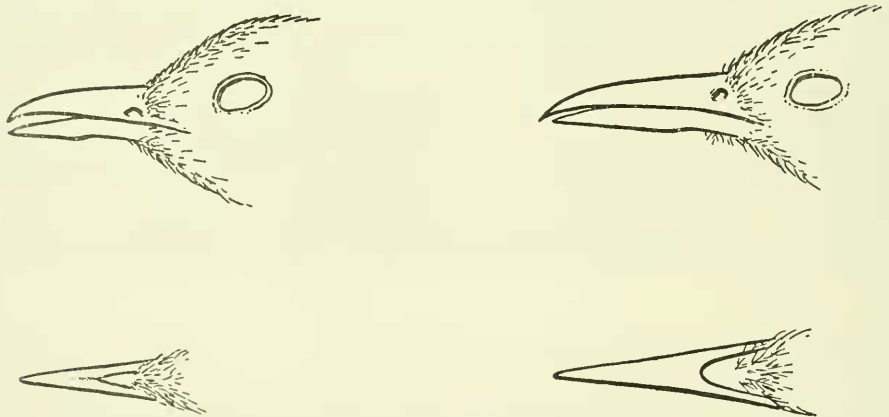


Figure 3. Head and bill of *Rhamphomantis megarhynchus* specimens; juv. Misool I. (YPM 75000) on left, ad. Passim, Geelvink Bay (AMNH 268532) on right. Slightly larger (about 1/5) than life size.

Measurements in mm:

	wing	tail	culmen	tarsus	middle toe with claw
<i>megarhynchus</i>					
Misool I.	86	60	16	16	16.5
Passim, Humboldt Bay (Gyldenstolpe specimen, 1955B)	94.5(2)	68, 70	22	17.5, 18	18, 19
(Reichenow specimen, 1915)	93		22	17	
Waigeu (type of <i>m. sanfordi</i>)	95	80(?)	23	17	
	99	76	(broken)	17	21

Soft parts: iris light brown, bill brown, gape light yellow, feet grayish brown. Weight 24 g.

It is unfortunate that I secured this single specimen of New Guinea's rarest cuckoo with no opportunity for observational or behavioral notes. It is obvious from examination that this genus belongs close to *Microdynamys* and *Eudynamys* in the construction of the base of the mandible. The mandibular rami are strong and arched making a V-shaped mental angle with ridged commissure or raphe, not a rounded angle with no trace of a commissure or raphe as in *Cuculus*, *Cacomantis* and *Chalcites*.

Scythrops novae-hollandiae Latham

A migrant, the Channel-billed Cuckoo was first seen flying into our area in early September. After September 7 on Halmahera, daily flights of these birds were observed. The first specimen seen in the Hollandia area was September 29, as was the first seen on Waigeu. A later date for the species was October 2 on Misool.

Wing ♂ 342 (2), ♀ (juv.) 346, (ad.) 370. A Halmahera specimen had a half-ingested mass of fruit in the stomach.

Centropus menbeki menbeki Lesson

Found in forest edges on Misool, round Lake Sentani and at Holtekong. These birds have a variety of gurgling, booming calls.

Wing ♂ 216, 221, ♀ 220. Bill ♂ 53, 55, ♀ 50.

Weight ♀ 505 g.

Centropus bernsteinii bernsteinii Schlegel

A pair were taken in long grass at Ifaar on Lake Sentani.

Wing ♂ 174, ♀ 172.

TYTONIDAE, BARN OR GROUND OWLS

Tyto tenebricosa arfaki (Schlegel)

Two females (one smaller bird may be missexed) of this uncommon black barn owl were secured March and October in the Baliem Valley near Wamena and at Ibolim. Neither bird was in breeding condition. One bird has all white, or clear white, edged outer margins of three of the greater primary wing coverts on one side and slightly less clear white edges on two of the feathers of the other side with an additional edging to a lesser wing primary covert giving the effect of a white patch or band on the wing. This is an aberrant condition, perhaps a by-product of a very small inbred population.

Wing 254 (♀ = ♂ ?), 283; tail 116, 132; tarsus 60, 70; culmen (from cere) 24, 26.

Tyto capensis baliem, subsp. nov.

TYPE: ♂ ad. (YPM No. 74786), collected September 9, 1961, near Wamena, Baliem Valley, Netherlands, New Guinea, by Jusup Khakiaj.

DIAGNOSIS: from *c. papuensis* of the Australian part of New Guinea, this form differs by being much darker, deep fuscous, rather than smokey-brown spotted with isabelline of the former race. Here and there isabelline feathers appear, among the lesser primary

wing coverts, in basal patches of the lesser secondary wing coverts, and at the base of the rump. But these patches are reduced and show up relatively little against the overall dark fuscous effect of the upper parts which is carried down onto two dark patches on the sides of the neck, a feature that is absent from the two birds photographed at Kup by Gilliard (Mayr and Gilliard, 1954, p. 341 and pl. 17.)

It is unfortunate that Gilliard did not collect these birds as there is only a single specimen in the American Museum collection from the Huon Peninsula, although Gilliard (*ibid.* p. 341) reports the species as "common." It is an extremely irregular species in occurrence, confined in the tropics to patches of old highland grassland and can hardly be described throughout its range in the Oriental and Australasian regions as common. In any case, our specimen appears to be the first seen or collected in the western half of New Guinea.

SOFT PARTS: iris dark brown, bill white, feet grayish brown.

MEASUREMENTS: wing 330, tail 122, tarsus 70, culmen (from cere) 22.

RANGE: known only from the type specimen from the Baliem Valley, Netherlands New Guinea, 4500-5000 feet.

STRIGIDAE, OWLS

Ninox theomacha theomacha (Bonaparte)

A single unsexed specimen from the Konda River, Swart Valley, taken by Dani hunters for Miss Denise O'Brien, in August, 1962, is our only specimen of this species. Wing 179.

Ninox rufa humeralis (Bonaparte)

A male was collected in heavy forest several miles back from the coast of Holtkong July 7. It attracted attention as it was being mobbed by drongos and other small birds.

Iris yellow, bill pale gray, cere yellow, feet yellow. Wing 332.

PODARGIDAE, FROG-MOUTHS

Podargus papuensis Quoy and Gaimard

Found from sea level to 5000 feet and in all areas where we collected. Of the sixteen adults taken four of the females are in a rufescent state of plumage, especially noticeable on the neck and breast areas. One juvenile with patches of down feathers on the sides of the chest, flanks, belly and thighs was taken at Ifaar on Lake Sentani in mid-July. A largely downy young with juvenal feathers on the sides of the head, wings and tail and whitish nestling feathers on the crown, back and underparts was collected on Misool January third.

Soft parts: (juvenal) iris brown, bill grayish horn, feet grayish olive brown. Wing ♂ ♂ 267, 285, 300; ♀ ♀ 263-310 (286.4).

Podargus ocellatus ocellatus Quoy and Gaimard

A pair, the female with granular ovaries, were taken on Misool in heavy forest on November 21.

Wing ♂ 169.5, ♀ 182. Soft parts: iris brown, bill ♂ light brown, ♀ light horn, feet ♂ pale pinkish flesh, ♀ whitish flesh. Weight ♂ 137, ♀ 132 g.

AEGOTHELIDAE, LITTLE FROG-MOUTHS

Aegotheles archboldi Rand

Junge (1953, p. 38) reports that *archboldi* and *albertisii salvadorii* were collected at the same locality northeast of the Wissel lakes. Our series from the Ilaga Valley all are typical of the coarse-barred *archboldi*.

Soft parts: iris brown, bill dark brown, feet flesh, nails dark brown. Wing ♂ ♂ 111-120 (117); ♀ 109-112; tail ♂ 95, 96, 97, 99; ♀ 90, 92; culmen ♂ 10, 11 (2), 11.5, 12; ♀ 11.5, 12. Weight ♂ ♂ 29, 30; ♀ 30 (3) g.

The fact that the collection of birds made by Dr. Boschma and Mr. van Eechoud in the Wissel Lakes area reported on by Junge included specimens of *Aegotheles albertisii salvadorii* and *Aegotheles archboldi*, heretofore considered to be geographical representatives, is most interesting. *Archboldi* was described by Rand (1941, p. 10) as a race of *albertisii*, as it was the only representative small owlet frog-mouth secured in the area of Lake Habbema and the Baliem. The altitude at which specimens were taken ranged from 7216 to 9184 feet (2200-2800m). Our specimens were all taken between 7500 and 11,000 feet. The localities in the Wissel Lakes region for *A. a. salvadorii* were Paniai Lake and Araboebivak and for *A. archboldi* at Araboebivak only. The latter camp is 50 metres higher than the Lake and more on the edge of the mountain slopes. Both localities lie at a little over 6700 feet. Two specimens only of *archboldi* were secured while five were taken of *salvadorii*. As these birds are identical in size and proportions and differ only in the relative coarseness of the barring, pencilling or dappling of the plumage pattern, it would appear that they are two good, virtually sibling species which are normally altitudinally separated where their ranges overlap geographically as follows:

Central New Guinea Mountains			
Australian		<i>Aegotheles albertisii</i>	<i>A. archboldi</i>
a)	Southeast New Guinea 3300-9500 ft.	present	
b)	Mt. Hagen 7500-8500 ft.	present	
c)	Nondugl 4900 ft.	present	
d)	Victor Emanuel Mts. 4800 ft.		present
Netherlands			
e)	Wilhelmina area, Baliem 7216-9184 ft.		present
f)	Nassau Range 7500-11,000 ft.		present
g)	Wissel Lakes area 6700 ft.	present	present
h)	Wandammen Mts. 4500 ft.	present	
i)	Arfak Mts. 6560 ft.	present	

The overlap at the Wissel Lakes is perhaps marginal. If so, *albertisii* would appear to occur at lower elevations in the presence of *archboldi*. If *archboldi* really occurs as low in the Victor Emanuel Mountains as 4800 feet, it is perhaps another marginal area of overlap. Often Papuans bring specimens in to camp from widely disparate altitudes. However, such meager evidence as there is suggests that *albertisii* outside of the range of *archboldi* may be found from 3300 to 9500 feet. Within the range of *archboldi* it occurs up to 6700 feet. *Archboldi* is recorded from 4800 feet (once?), otherwise from 6700 to 11,000 feet.

Aegotheles insignis insignis Salvadori

Two males, one in the rufescent phase, from the Ilaga measure: wing 154, 161.5; tail, 124, 133; culmen 17, 18. Weight 67, 85 g.

Soft parts: iris brown, light brown (rufescent), bill, dark brown, light brown (rufescent), feet, pale tan, flesh.

CAPRIMULGIDAE, GOATSUCKERS

Caprimulgus macrurus schillmölleri Stresemann

A series of seven birds from Waigeu seem slightly smaller than two males from Batjan and Halmahera, but this is partly due to the make-up of the skins. However, all, while agreeing in color tone with the north Moluccan birds, have a far more extensive and pronounced vermiculated pattern on the feathers of the lower throat and breast. This is perhaps a variable feature and I would hesitate to separate the population on that basis alone.

Wing ♂ 181, 186.5; ♀ 179-181.

Some degree of wing moult is shown by these birds, taken in September, the moult terminating at the outermost primary. The Halmahera (topotype) and Batjan males have wing measurements of 188, 189, and one has the outer primaries in sheath. Both have enlarged gonads and weighed 78, 79 g.

Jusup Khakiaj noted that his Waigeu birds were calling and flying at about six in the morning. It is then and at dusk that their monotonous "tok, tok" call can be heard.

Caprimulgus macrurus yorki Mathews

Found from sea level at Hollandia to 4500 feet near Wamena in the Baliem and Bokindini, west Baliem. A nestling was taken in the Baliem in January.

Wing ♀ 174-180.

Eurostopodus archboldi Mayr and Rand

A male in fresh plumage from the Ilaga at 7500 feet is our only record.

Wing 191.5, tail 134.5, culmen (from cere) 7. Weight 74 g.

Comparison of this specimen with others in the American Museum of Natural History collection gives no indication of any geographical variation of color range or plumage pattern of this rare, little-known species. This is a slight westward extension of the species.

APODIDAE, SWIFTS

Mearnsia novaeguineae novaeguineae D'Albertis and Salvadori

A series from Bodim in early August are in slightly worn plumage and show no sign of breeding activity.

Wing ♂ 123-130.5 (126.9), ♀ 127; weight ♂ 29-39 (35.5), ♀ 29 g.

These swifts hawked among the high forest trees, but descended occasionally at dawn into the clearing near our camp site at Bodim. In the early morning mist they flicked by us with a perceptible "whish." Occasionally they called, a short chitter as they flew up over the trees.

Collocalia esculenta esculenta (Linnaeus)

Three males from Misool and Bodim have wing measurements of 93.5 (worn), 97.5, 98. These specimens weigh 5, 8, 10 g respectively and when compared with birds from the hills seem so much smaller in proportion that it is probably useful to keep the two populations separate.

Seen hawking over forest trails and clearings.

Collocalia esculenta erwini Collins and Hartert

Two Ilaga birds, juveniles are in wing moult September 5. Other specimens from the Baliem and Ilaga measure: wing, 108-114 (112.5); weight 9-10 g.

Swart Dani name, "wuditnuk."

Collocalia hirundinacea hirundinacea Stresemann

This species with feathered tarsi, paler, more grayish underparts, often showing dark brownish shaft streaks, a prominent white loreal spot and white downy tips on the back feathers, was the common swift in the Ilaga, often hawking over exposed bluffs in the

cleared fields at mid-day where presumably warm updrafts brought many insects into the air.

Wing 121-127. The overlap cited by Rand (1942, p. 458) and noted by us makes one dubious about the value of preserving the name *excelsa* Ogilvie-Grant for a bird with a wing measurement of 127. Weight 9 (1), 10-11 g.

Wing in some birds in moult September 5.

Collocalia vanikorensis granti Mayr

Holtkong, Bodim, and Misool. Wing 113, 114, 117.5. Misool birds 114 (2), 116 as I reported (1959, p. 16). Weight 12 (2), 14 g. Two August birds are juveniles with unossified skulls. A female from Holtkong (July 7) had slightly enlarged gonads and much swollen salivary glands.

HEMIPROCINIDAE, CRESTED SWIFTS

Hemiprocne mystacea mystacea (Lesson)

A common bird in open country or forest edges near the coast, on Misool and in the Hollandia Bay area. Wing moult was observed in October. A male, taken in July in non-breeding condition weighed 74 g. A pair of the Moluccan race, *confirmata*, taken on Halmahera in September in breeding condition weighed ♂ 76, ♀ 69 g.

ALCEDINIDAE, KINGFISHERS

Alcyon azurea lessonii Cassin

Two females were taken in bird nets in dense forest on Misool in November. The nets were set over a small stream near our camp at Tamulol. These birds had granular ovaries, and measured: wing, 74.5, 75, and weighed 33, 39 g.

Soft parts: iris dark brown, bill black, tip white, feet orange.

Ceyx lepidus solitarius Temminck

Taken on Waigeu, Misool and on the mainland at Bodim. Soft parts: iris brown, bill black, feet orange.

Wing ♂ 52-56, ♀ 56. Weight ♀ 16, 20 g.

A series of the pale-billed *uropygialis* from the Moluccas weigh ♂ ♂ 11-20 g, ♀ 17, 24 g. The heaviest female had enlarged ovaries September 13.

Syma torotoro torotoro Lesson

A juvenile bird with black bill was taken on Misool November 19. The tomia of the culmen are barely toothed, the saw-tooth appearance apparently not developing markedly until later. Perhaps this is correlated with the change of color of the bill, and is achieved by a process of wear. This species has an unkingfisher-like chittering call. One Misool juvenile male has a white spot in the center of the broken black nuchal collar. This appears irregularly in series and may be a character of juvenal plumage.

Wing ♂ 79.5, ♀ 80, juv. ♂ 78. Weight juv. ♂ 42 g.

Syma megarhyncha wellsi Mathews

An adult was collected by Miss O'Brien at Katupata in the Swart Valley.

Glytoceyx rex rex Sharpe

A pair from Bodim in the Tor River area were taken in dense high forest. These birds come down to the ground in damp areas and probe for invertebrates with their shovel-like bills. Bergman (in Gyldenstolpe, 1955B) reports the stomach contents of a female from the Anggi Lakes as lizards.

Soft parts: iris brown, bill, upper mandible dark brown, lower mandible whitish, feet brownish gray.

Wing ♂ 158, ♀ 160.5; weight ♂ 273, ♀ 303 g.
Tor River name, "kong."

Sauromartia gaudichaud (Quoy and Gaimard)

A series from Waigeu, Misool, Sele Strait and round about Hollandia are remarkably uniform in size and color. One female which I assume to be subadult has black terminal bars on the feathers of the white upper breast as well as the chestnut abdomen and belly. The upper breast feathers are tinted with isabelline also like the neck feathers forming the pale nuchal collar. A December male from Arar in Sele Strait is excessively worn, the chestnut lower parts being very pale and washed out in tone as a result. The central rectrices are in partial sheath, but curiously enough, are not the first to be renewed, as one of the two next lateral pair to the central pair has just been renewed and is complete, its partner on the other side being still the previous old worn feather. Two July females from Bodim and Sentani have the outermost three primaries in sheath.

Wing ♂ 133-142, ♀ 137-149; weight ♂ 130, ♀ 156, 160 g.

Halcyon nigrocyanea quadricolor (Oustalet)

A single specimen of this rare kingfisher was collected at Holtekong in late September by Jusup Khakiaj. It presumably was collected in interior forest as he told me that he was in the foothills when he shot the bird. The outermost primaries are in sheath showing that wing moult is nearly completed. This species would appear to form a superspecies with *Halcyon macleayii* of Australia, *H. diops* of the Moluccas and *H. winchelli* of the southern Philippines.

Halcyon sancta sancta Vigors and Horsfield

This migrant was collected on Kofiau and the Ajoë Islands as already reported by me (1959B) and also on Waigeu, off Sarmi on the north coast and in the Ilaga at 7500 feet.

Weight ♂ 45, ♀ 51, 52 g.

Halcyon saurophaga saurophaga Gould

Collected on the Schildpad Island of Kamoia, where I first remember meeting this species in September, 1937; off Sarmi and near Hollandia.

Weight ♂ 105, ♀ 120 (2) g.

Tanyiptera galatea galatea Gray

Waigeu Island, September, 1955.

Tanyiptera galatea meyeri Salvadori

Immature specimens were collected at Bodim in August as well as an adult just renewing its central tail feathers, the remaining rectrices being worn to stubs. Wear additionally shows particularly on the breast of September adults, or of May juveniles (*elliotti*). This may be due to abrasion caused by contact with gravel and stoney soil when digging on the forest floor for insects and worms. This bird calls with a distinctive "wheeyou."

Adults weighed ♂ 56, ♀ 65-72 g. In the subspecies *margarethae* from Batjan we recorded: ♂ 53, 56; ♀ 52, 78; in *isis* from Halmahera, ♂ 55, ♀ 69 g.

Tanyiptera elliotti Sharpe

I have already reported on our fine series of this beautiful bird, not previously collected since 1875 (1959B).

Tanyiptera sylvia sylvia Gould

A single specimen, presumably a male, was taken July 10 at Holtekong. The worn central tail feathers are almost completely dark, only having a narrow white edging on the edges of inner vanes. Presumably this is a migrant to New Guinea.

MEROPIDAE, BEE-EATERS

Merops ornatus Latham

A winter migrant taken on Kofiau, the Ajoe Is. and near Hollandia in July and September. One male weighed 29 g.

Merops philippinus salvadorii Meyer

A male in breeding condition was collected near the airstrip at Ifaar, Sentani Lake, August 11. These birds flew about the hangars, perched on telegraph wires and circled tantalizingly overhead in full view of passersby, thus preventing the zealous collector from securing more than one specimen. Some chasing was observed and pair formation seemed to be in progress. The species has a loud double "chack-chack" note.

Soft parts: iris dull red, bill black, feet dark brown. Wing 131; weight 42 g.

CORACIIDAE, ROLLERS

Eurystomus orientalis orientalis (Linnaeus)

A common migrant found in forest clearings or along rivers or open country edges in March and from July until November ranging from the sea coast to the Baliem. A March specimen appears to be young and is just moulting a few new blue feathers on the greenish throat. On July 1, on the Tami River, I observed a single bird at a 3-inch diameter hole in a dead stub in a Papuan garden. It was a male in non-breeding condition, in worn plumage moulting in blue feathers on the throat.

Wing ♂ ♀ 189-197; weight ♂ 130, 154, ♀ 130, 142 g.

Eurystomus orientalis cyanicollis Vieillot

Stresemann (1952) pointed out that the type locality of Linnaeus' *orientalis* should be Amboina, and, therefore, the Oriental region birds should be called *cyanicollis*. This darker form, the underparts more richly calamine-blue-washed, appears as a migrant in the Moluccas and even to Waigeu Island from which we have a September specimen.

Wing ♂ ♀ 192-200; weight (Halmahera and Batjan birds) ♂ 166, 176, ♀ 175, 182.

BUCEROTIDAE, HORNBILL

Aceros plicatus ruficollis (Vieillot)

A familiar feature of dense high rain forest in the New Guinea lowlands up to 1500 feet, but in my experience far more local and less common than before World War II. Only in the coastal lowland of Batjan did the hornbill seem as common as it had before the War. Birds were showing some breeding behavior and searching for nest sites in late September and October. A January male from Misool is indicated as being in breeding condition. A September male from Waigeu is moulting the primaries.

PITTIDAE, PITTAS

Pitta erythrogaster macklotii Temminck

A series from Misool were collected in January, February, October and November. There is no sign of moult. In color there is considerable variation in the feathers of the crown of the head. Some specimens have blue edges to the inner margins of the crown feathers. One specimen has a white feather or two on the lesser primary coverts, a feature mentioned by Gyldenstolpe (1955B). Males show slightly enlarged testes in mid-November.

Wing ♂ ♀ 100-107 (103); weight ♂ 80, 86, 91, 96, ♀ 84 g.

It is worth noting that a juvenile and another bird just moulting the throat feathers from the dark buff of the juvenal to the adult black (but otherwise in adult plumage) were taken on Batjan in mid-October. These two subadult females weighed 65, 67 g.

Pitta erythrogaster habenichti Finsch

A male and two females of this brightly colored pitta were taken at Bodim in late July and early August. None show any sign of moult or gonadal development. This pitta has a ventriloqual call which is most difficult to locate. I have often spent many minutes looking for the caller on the ground only to locate it high up fifteen feet or more, in a mid-height substage forest tree, usually one with moderate to heavy foliage, in which the motionless singer is perfectly concealed. The call is a machine-like humming like a small distant motor starting up. This is repeated over and over in a monotonous but highly provocative way. Each burst of humming may last for two minutes, starting low, increasing in intensity and then dying away.

Wing ♂ ♀ 100, 102.5, 106.5; weight ♂ 79, 90, ♀ 79 g.

Pitta sordida novae-guineae Müller and Schlegel

I watched one of these beautiful pittas calling in a patch of sunlight in dense forest on Misool. When the bird raised the wings very slightly, merely humping them up at the shoulders, but thus exposing the glistening iridescent aquamarine blue patch of the lesser primary coverts, the effect was like a flash, momentarily dazzling. The bird has a loud mournful call, much louder in proportion than the size of this thrush-like creature would lead one to expect.

A specimen from Holtekong is showing outer primaries in sheath July 10. In tone the body plumage of this bird is more bluish, less greenish below, above (fresh) darker more olive green, less bronzey-green (worn). This is a lighter bird than *erythrogaster*, even if similar in wing length. November males show slightly enlarged gonads.

Wing ♂ ♀ 101-106; weight ♂ 77, 79, ♀ 70.

HIRUNDINIDAE, SWALLOWS

Hirundo rustica gutturalis Scopoli

A migrant; an unsexed immature in worn plumage was taken near Wamena in the Baliem. Two males from Batjan (Oct.) weighed 17 g (2).

Grand Valley Dani, "watatipo."

Hirundo tahitica frontalis Quoy and Gaimard

Breeding on Batjan in late August and September, we failed to find any breeding birds in New Guinea, although the species was collected in the Baliem.

Weight ♂ 16 (2), ♀ 14, ○ 15 g.

Petrochelidon nigricans nigricans (Vieillot)

Two birds were taken near the airstrip at Ifaar, Lake Sentani, August 11.

Weight ♂ 16, ○ 17 g.

CRACTICIDAE, BELL MAGPIES

Cracticus cassicus cassicus (Boddaert)

Moulting adults were collected in February, September and October on Waigeu and Misool Islands. Young birds, one from Holtekong not long out of the nest, were taken in July, September and October. One October adult male from Poeë was said to be in breeding condition. The black and white butcher bird is a striking feature of cultivation and forest edges in the coastal lowlands, its varied musical calliope-like notes are loud and merry, notably near the airport at Biak. A male weighed 165 g, and the juvenile from Holtekong taken in July, 154 g.

Cracticus quoyi quoyi (Lesson)

A juvenile, also in completely black plumage but with a bluish-gray bill, was taken on Misool November 20. A female moulting the wing coverts was taken December 3rd. A

male, November 21, had enlarged gonads. The black butcher bird seems more locally distributed than *cassicus*, and may be met with in deeper forest. A great variety of calls, some like *Paradisaea*, a loud "ong ong."

Soft parts: iris brown, bill black, basally gray, feet black. Weight ♂ 198, ♀ 164, juv. ♀ 152 g.

ORIOLIDAE, ORIOLES

Oriolus szalayi (Madarász)

A subadult bird from Sentani, July 17, has a black bill and the throat more heavily streaked with black and solid black on the sides of the lower throat. The lower primary and secondary wing coverts have dull buffy-rufous edgings. Birds in breeding condition were taken in August (Bodim), October (Poeë) and December (Arar, Sele Strait).

Weight ♂ 107, 109; ♀ 100, 130 (ovaries enlarged).

Iredale (1956, vol. 2, p. 193) revives the name *melanotis* (Bonaparte) for this species.

DICRURIDAE, DRONGOS

Dicrurus hottentotus carbonarius Bonaparte

I have already published elsewhere the fact that Kofiau Island birds belong to the race *atrocaeruleus* of the Moluccas (1959B). A nestling *carbonarius* was taken on Misool on November 15. Adults in moult were taken in July and subadults with pale, light tips or edgings to the feathers of the abdomen were taken on Waigeu in September. Breeding birds were collected on Misool in mid-November and at Arar on December 4; on Batjan (*atrocaeruleus*) September 30 and October 11.

Weight (grams):	<i>carbonarius</i>	<i>atrocaeruleus</i>
♂♂	74, 81 (2), 91, 99	93, 95, 99, 100
♀♀	74, 75 [nestling 57]	82, 96, 97

ARTAMIDAE, SWALLOW-SHRIKES

Artamus leucorhynchus leucopygialis Gould

Relatively uncommon in the lowland areas where we worked, we secured a female in a forest clearing at Bodim. A September male from Halmahera weighed 46 g.

Artamus maximus Meyer

Common in the Ilaga at 7500 feet near the clearing of the airstrip, this bird has a high chattering call, "chat chat chat" as it flies. Birds were in breeding condition in late August from the 20th to September 6. An immature bird on the wing was collected in March in the Baliem. The skin of a nestling was brought in to Miss O'Brien in the Swart Valley in August.

Swart Dani name, "watloman."

Wing ♂ 160-167, ♀ 171, ○ 159-165; weight ♂ 59-70 g.

STURNIDAE, STARLINGS

Aplonis cantoroides (Gray)

Found on Lake Sentani, at Holtekong, on the small island off Sarmi, on Waigeu and near Wamena in the Baliem Valley, a new record for the interior. July and August males were in breeding condition. One bird, unsexed, taken in the Baliem in February-March has a single immature streaked under tail covert.

Wing ♂ 101-104, ♀ 97-103; weight ♂ 57, 61, ♀ 58 g.

Aplonis mysolensis mysolensis (Gray)

Found on Kamoia in the Schildpad Island, off Waigeu and on the Ajoe Islands.

Wing ♂ ♀ 105-115.

A juvenile was collected near Kabare, Waigeu presumably in early September. An immature male, a breeding male, and a female of *forsteri* from Batjan weighed 57, 64 and 60 g respectively in October.

Aplonis metallica metallica (Temminck)

Collected on Misool, Waigeu, Sarmi island off Sarmi, Tami River and in the Ilaga at 7500 feet. At Mosso on the Tami River in a village garden I found a nesting colony of these metallic starlings high up in two huge, isolated *Ficus* sp. trees. The nests were in clusters of two to three, made of fibrous branchlets, rather large and rounded like weaver nests, suspended from the drooping ends of the tree branches. The entrance holes were in the side. Pairs of adults were flying excitedly to and from the nests, landing on the tip ends of the structures, calling and posturing. Close to them very often were two or three young in pale subadult dress. These birds appeared to be courting also. An adult bird chased a young bird away from the nesting area. I did not see any of the young perch on any of the nests themselves. But there must be a great deal of reinforcement and learning for the young birds in this situation.

A young bird not long out of the nest was taken on Waigeu in September. The brownish plumage above and streaked plumage below shows only greenish metallic, no purplish reflection. But the pointed tail and whitish basal coloration from throat to under tail coverts would seem to place this specimen in *metallica* rather than *mysolensis*. A Tami River male had enlarged gonads on July 1. The Ilaga bird is a highland record, but see Sims (1956) and Rand (1942) for other records in the highlands.

Wing ♂ 105, 111, ♀ 101-105; weight ♂ 66, 75 (testes enlarged), ♀ 45, 52, 59, 60 g.

Mino anais anais (Lesson)

A pair of this brightly-colored black-headed myna was taken in second growth scrub and hibiscus trees at Arar.

Soft parts: iris yellow, ocular skin cream, bill yellow, tip black, feet yellow.

Wing ♂ 135, ♀ 137.5; weight ♂ 157, ♀ 125 g.

Mino anais orientalis (Schlegel)

Two males from Bodim of this strikingly marked race with a golden-yellow head and ear coverts measure: Wing 146, 151; weight 154, 175 g.

Soft parts: iris yellow, ocular skin dark blue, bill and feet yellow.

Mino dumontii dumontii Lesson

Dumont's Mynah or Grackle was common on Waigeu and not seen on Misool. A single bird was taken at Arar.

Soft parts: iris brown, facial skin yellow, bill and feet orange-yellow. Wing ♂ 150-155, ♀ 142, 151; weight ♂ 204 g.

Mino dumontii violaceus Berlepsch

A form from the north coast of New Guinea (wing ♂ 153, 154, 160, ♀ 148-151) roughly similar in size to *dumontii* but with larger orange skin patches. These birds appear to be larger and much heavier in the hand also.

Soft parts: iris brown, facial skin orange-yellow, bill orange, feet orange or orange-yellow. Weight ♂ ♂ 237, 242 g.

Birds in breeding condition were taken in July and August.

CORVIDAE, CROWS

Corvus fuscicapillus megarhynchus Bernstein

A female from Waigeu was collected by Khakiaj September 3.

Soft parts: iris blue, bill white, tip black, feet black. Wing 327.5.

Corvus tristis Lesson and Garnot

Four of this curious-looking polymorphic crow were taken at Holtekong, although we also saw it on the Tami River. This crow flies in small parties of up to twenty and is rather shy, shifting position and nearly always staying on the fringe of original high forest. One bird, a male in breeding condition, July 10, is rather blackish-brown, the other three are pale with dirty cream colored heads.

Soft parts: iris light blue, bluish white, facial skin purplish pink, whitish, feet white, black, flesh. Wing ♂ 292, 320, ♀ 323, 340.

Corvus orru orru Bonaparte

Kamoa, Schildpad Is., Arar and Waigeu. A male with enlarged gonads was taken December 1 at Arar, while the Kamoa male taken in March has down on the lower vent and thighs and pale skin round the base of the mandible and gular area showing that it has not been long out of the nest. This species has a dull, low rattling croak in the nesting season as well as the deep, harsh, raven-like caw of the species.

PARADISAEIDAE, BIRDS OF PARADISE

Loria loriae loriae Salvadori

A bird of low levels in the Ilaga forest, near the ground or in second-stage trees. All our specimens are females without a single adult male. This is apparently due to the heavy human predation on birds of paradise in the Ilaga Valley which effectively prevents males in full plumage long escaping the plume hunters. Two birds taken in early September are juveniles, one unsexed, not long out of the nest with traces of down on the vent, lower flanks and thighs. In color they are similar to the adult female.

Wing ♀ ♀ 97-105 (102); weight ♀ ♀ 71 (1), 80-95 g.

Macgregoria pulchra carolinae Junge

Found above the main Ilaga Valley on the plateau trail heading west towards the northern slopes of Carstenz from 8000 to 11,600 feet. These orange-wattled birds of paradise are not shy, perching openly in bushy areas of alpine scrub, often feeding on flowers and berries out in plain sight. Males with enlarged gonads were taken September 5, and a young, fully fledged, but still covered with down feathers round the head and on the underparts was taken September 9.

Philip Temple, who visited the Carstenz plateau, north of Mount Carstenz in August, 1962, while on the New Zealand New Guinea Expedition, has sent me a note and photograph of a specimen shot at 11,000 feet. The species was very tame, flying from clump to clump of stunted podocarpus, making a whirring noise with the wings while in flight, although they also glide silently. No calls were heard.

Western Dani (Ilaga) name, "wunin," or "genat;" Uhunduni, "engabec."

Manucodia ater ater (Lesson)

Several immature birds were taken on Waigeu, and at Poee and Holtekong. A female weighed 198 g.

Manucodia jobiensis rubiensis Meyer

A male from the Tami River is in breeding condition June 30. Wing 175. Weight 229 g. Iris orange.

Manucodia chalybatus (Pennant)

A pair from Misool and an unsexed bird from Bokindini at 4200 feet represent our series of this handsome manucode. Iris color was red in the male and sex indeterminate specimen, orange in the female.

Weight ♂ 260, ♀ 242 g.

Ptiloris magnificentus magnificentus (Vieillot)

The Rifle-bird is unequally distributed in lowland forest along the north coast. Whereas it appeared fairly common east of Hollandia along the farther bay, it was scarce at Bodim. A male was in breeding condition July 2.

Wing ♂ 182, 183, ♂ im. 174, ♀ 146-175. Weight ♂ 187, ♀ 127, 185.

Seleucidides melanoleuca auripennis Schlüter

Male adults and young males, one with a black throat, the other merely with a black cap, were taken by us on the Tami River and at Holtekong in July. One adult July 8 had slightly enlarged gonads.

Wing ♂ 163-164, juv. ♂ 160, 169; weight ♂ 190, 202, juv. 182, 196 g.

Paradigalla carunculata intermedia Ogilvie-Grant

A single adult male Wattled Bird of Paradise from the Ilaga conforms to Ogilvie-Grant's description of *intermedia* (1913) from the Utakwa River, Nassau Range, and demonstrates that in fact two species, *carunculata* and *brevicauda*, are represented in the central highlands. This subspecies of *carunculata* differs from the nominate form as originally cited by Ogilvie-Grant, namely in the shorter tail, and in the lower, mandibular wattles being clear lemon yellow. My original notes on the soft parts of this specimen are: iris dark brown, bill black, wattles (both sets, upper and lower) clear lemon yellow, feet black. This specimen has a wing of 153, tail 110. Ogilvie-Grant's birds had wing measurements of 155-7, and the tail of his type specimen measured (in the lateral rectrices, the central pair being shorter) 92. Presumably this central pair was new, not fully moulted out, as in our specimen the tail has the normal wedge shape of *carunculata*, the central rectrices being the longest. Weight 166 g.

Thus the range of *carunculata* should be:

P. carunculata carunculata, Vogelkop, Arfak Mountains.

P. carunculata intermedia, central highlands, Nassau Range.

P. brevicauda, central highlands from the Wissel Lakes, Weyland Mountains, Snow Mountains east to the Oranje, Victor Emanuel, Sepik, Hagen and Bismarck Mountains.

Western Dani (Ilaga) name, 'genat;' Uhunduni, "tenengel."

Drepanornis bruijnii Oustalet

Males and females were taken at Holtekong and Bodim. In very tall *Agathis* trees at Bodim, July 28, I heard the male bird call, a loud, not unmusical series of descending whistles reminiscent of the rifle bird. The first note starts at the tone and pitch of the second note of the rifle bird's call. From this start came a series of descending whistles, repeated over again, several at a time. In between these extremely loud calls, this male as it moved about in the tree made several gruff, churring notes rather like a typical *Paradisea*. It was a male in breeding condition in adult plumage with the exception of a patch of subadult barred feathers on the belly. One female is moulting the primary wing coverts August 1.

Wing ♂ 153, 155, 156, ♀ 147, 150, 151. Soft parts: iris brown, ocular skin grayish-brown, purplish-brown, bill pale brown, feet brown (with a purplish cast in one specimen), or, ♀ grayish-brown. Weight ♂ 161, 164, 169; ♀ 144, 145, 149 g.

None of the females were in breeding condition.

Papuan names: Hollandia Bay, "Yokwa," upper Tor River, "Kuruwai."

Epimachus meyeri albicans (van Oort)

Taken in the Ilaga and Baliem from 7500 to 10,500 feet in the former area and an unknown altitude in the Baliem. All our specimens are young. No fully adult black males were seen, though the long black tail feathers were a feature of headdresses. Presumably adult black males are rare as a result. One male, of a general blackish cast of color, the dark olive-brown feathers invaded with black, especially on the wings and tail

and with a black, metallic forehead patch had slightly enlarged gonads. Presumably birds breed at two to three years of age, and this plumage represents such an age class. The blackish shaded feathers of this plumage are difficult to describe. The whole bird appears dark, almost as if melanin granules were invading the feathers in a living progression. It is an all over-shading which must increase gradually with successive moults.

Another male taken August 18 is a young bird with soft, disintegrated plumage on the lower belly and vent, the top of the head fluffy and the tail feathers in sheath. The bill is short (61), some two-thirds the length of an adult bill.

Wing ♂ 178; ♀ 150-157. Soft parts: iris ♂ ♀ blue (brown in juvenile), bill black, gape yellow, feet ♂ black, ♀ brownish black, grayish brown, juv. ♂ blackish gray. Weight ♀ 160, 164, 175 g.

Grand Valley Dani name, "malabecok."

Astrapia splendidissima helios Mayr

The commonest paradise bird in the Ilaga, and one apparently not in local demand by the tribal people. The species was most common in the patches of forest found at 7500 feet but rarer above. One specimen was taken at 9000 feet. In color our adult males match *helios* though perhaps somewhat more richly purple on the back. Two adult males taken August 20 and 25 are moulting the head and chest feathers. Another male is a juvenile bird taken August 19, the feathers of the breast and lower underparts still downy and the bill rather short.

Wing ♂ ad. 131-136; subadult ♂ ♂ 134-140; ♀ ♀ 128-131 (138 = ♂?). Soft parts: iris dark brown, bill black, feet gray, grayish-black, dark gray. Weight ♂ 130-149, ♂ subad. 125-138, ♀ 114-135 g.

Dani name (Ilaga), "tekena;" Uhunduni, "degen."

Lophorina superba feminina Ogilvie-Grant

A rare bird in the Ilaga but rather common in the Baliem, although males were difficult to secure. Young males seem to differ from females only in slightly larger size.

A single, sex indet. bird from the Ilaga at 8400 feet had iris brown, bill black, feet brownish black; weight 75 g.

Dani name (Ilaga), "teten," (Baliem), "terel ha;" Uhunduni, "yel."

Pteridophora alberti alberti Meyer

A single female from 7500 feet is our only record of this species which is said by the Danis not to occur in the Ilaga, but to be found lower down to the north.

Wing 110. Soft parts: iris brown, bill black, gape and lining of beak bluish-green (sea green), feet brownish-black, pads dull yellow. Weight 74 g.

Dani name (Ilaga), "wigelo;" Uhunduni, "tat" (presumably derived from one of the notes of the species).

Cicinnurus regius rex (Scopoli)

Fairly common in high jungle on Misool. A male was in body moult in February. A young male in brownish female plumage with reddish wing edges was taken January 3. One morning in a thicket I sat waiting, hoping to see *Paradisea* which was calling nearby, only to find myself staring into the eye of a King Bird of Paradise about six feet away. The bird was entirely concealed except for its eye and the dull velvety blackish tuft of feathers over the eye which raised and contracted itself as I watched. The bird disappeared as silently as it had arrived.

A female had: iris brown, bill horn color, gape chartreuse, feet purplish-blue. Weight 58 g.

Cicinnurus regius similis Stresemann

A male from the Tami River was in breeding condition July 2.

Soft parts: iris brown, bill yellow, feet prussian blue, deep blue, ♀ iris brown, bill brown, feet prussian blue. Weight ♂ 50, 52, ♀ 57 g.

Diphyllodes magnificus chrysopterus Elliot

Found by us only at Bodim. Males were in breeding condition on their display grounds in late July and early August. A typical dancing ground was elliptically shaped, some twenty feet long and ten wide, the saplings throughout well cleared of twigs and leaves. In the center the ground was cleared of leaves and debris in a circular area. The calls are very loud as noted by Rand (1940), "cree cra cra cra."

Wing ♂ 110-116, ♀ 106-116. Soft parts: iris brown, dark brown, bill pearl gray, grayish-blue, blue-gray, inside of bill jade green, feet deep blue, dark blue. Weight ♂ 95-103, ♀ 84-100 g.

Paradisea minor minor Shaw

Paradise birds were calling loudly and males collected by us were in breeding condition from 30 June on the Tami River to 27 July at Holtekong. Where birds were going into moult by mid-July in the Hollandia Bay area, the breeding season was prolonged a month or more late, and it would obviously be late August before adult moult was in progress 120 miles west on the Tor and Boe Rivers. A non-breeding young male was moulting the head and neck feathers July 27. A female was moulting the throat feathers and primaries October 10 at Poe. At Bodim on July 27 I hid in the underbrush under an enormous *Ficus* tree and watched two male birds of paradise with yellow plumes posture and dance on one of the upper horizontal branches. Several white-breasted birds flew actively about and were alternately chased by one or other of the full-plumaged males. I had no way of ascertaining if there were young males, but the chasing could easily have been of young males being warned off by the older birds. Most of the calls were the loud somewhat musical "whick" variety, interspersed with churrs and growling notes as the birds bustled busily back and forth from limb to limb.

Wing ♂ 181, 186.5, ♀ 157, 159. Soft parts: iris yellow, bill and feet ♂ bluish-white, to bluish gray, ♀ bill gray, feet gray, purplish gray. Weight ♂ ad. 236, 257, ♂ im. 229, 232, ♀ 145 g.

Paradisea minor pulchra Mayr and de Schauensee

A single adult female of this race with granular ovaries was taken by me November 13 on my Misool. The species appeared rather uncommon when we were there compared to my first visit in 1937. Calls were heard rarely in the forest and Jusup later secured no more specimens. Mayr and de Schauensee in their description of this subspecies (1939B, p. 151), make no mention of the fact that the female plumage of *pulchra* differs considerably from that of *minor*. The female has the hinder crown invaded with yellowish from the nape. It is as if the crown was covered with blotting paper, in this case a deep mahogany color, which is gradually along the back edge absorbing a yellow stain from the yellow nape. Below, the rich mahogany stain of the throat seems to have washed off down onto the upper breast and sides of the upper flanks as if it was a dye which had begun to wash in the rain. The underparts thus are not immaculate creamy whitish from the throat to the thighs as in adult females of *minor*, but suffused with this deep reddish on the upper edges and sides of the underparts. Hartert (1930) speaks of young females of *minor* as having brownish red on the lower throat and sides. This is obviously a transition towards *P. rubra* of Waigeu, in which the adult female is brownish-red in color all over the lower breast and abdomen, having retained only a dull golden yellow upper breast ring, a continuation of the golden-yellow collar. If young *minor* show a tendency to this, perhaps these island subspecies represent the retention of more juvenal stages of plumage.

Similarly on the upper parts *pulchra*, in the invasion of yellow onto the hind crown, shows a cline in color towards the crown of the female of *P. rubra* in which the whole hind crown is sharply demarcated, golden yellow.

Wing ♀ 160; soft parts: iris yellow, bill bluish-white, feet grayish brown; weight 180 g. This female appears to be a considerably heavier bird than *minor* from the mainland.

Paradisea rubra Daudin

Four females were taken on Waigeu near Mingalon in September, none in breeding condition, nor in moult.

Wing 158, 165, 166, 167.

PTILONORHYNCHIDAE, BOWER-BIRDS

Ailuroedus buccoides geislerorum Meyer

This spotted catbird makes a prolonged harsh churring noise in the underbrush, a most unpleasant, almost grating sound. Not particularly shy, they are expert at concealing themselves in vines or heavy epiphytes covering the branches of substage trees. None were in breeding condition, although two males, July 7 and August 2, had slightly enlarged gonads.

Wing ♂♂ 120-131, ♀ 124-130. Soft parts: iris red, dull red; bill white, gray, feet gray, bluish gray, greenish gray (twice). Weight ♂♂ 127, 134, 135, ♀♀ 132, 133, 135 g.

Ailuroedus crassirostris misoliensis Mayr and de Schauensee

A male taken on Misool November 16, is renewing the central rectrices. Wing 164.5, tail 140 (moult); culmen 35. This specimen is not as large in wing and bill as the type (1939C, p. 152), although the tail is longer than others measured of the mainland form or of the type.

Soft parts: iris red, bill white, feet gray. Weight 233 g.

Archboldia papuensis papuensis Rand

Two males were taken in the Ilaga at 9400 and 12,000 feet on September 6 and 9. The bird from 12,000 was taken at its bower and had slightly enlarged testes. Both birds have glossy black crowns, glossy velvet edges to the feathers of the back and scapulars, and both have traces of the deep golden yellow feathers coming in in two areas, the forehead, where the tuft of feathers occur as shown in Sutton's frontispiece plate in Mayr and Gilliard (1954), and the posterior crest which consists of narrow, depressed feathers. These birds measure: Wing 157 (2); tail 147, 157; depth of tail fork 17, 29, culmen 25, 27. Weight 170, 175 g. Soft parts: iris reddish brown (amber), brown, bill black, feet bluish-gray.

The finding of these two specimens shows that typical *papuensis* which ranges from the Oranje Mountains, Lake Habbema and the Bele River west to the Nassau Range (Ilaga) and the Weyland Mountains (Wissel Lakes), has an adult male plumage with a crest similar in development to that of *sanfordi* from Mount Hagen and Mount Giluwe. All previous specimens from Netherlands New Guinea have been males in less well-developed stages of plumage. A fully-crested male still remains to be secured. Whether such a bird will have a much longer, more forked tail and slightly longer wings remains to be discovered. If so it may well be that this species is monotypic, for otherwise the cited subspecific differences are not compelling.

The bower of one of these males, according to my assistant Jacob, whom I had asked to be particularly on the lookout for it, consisted of two walls of interlaced twigs about two feet six inches apart and eighteen inches high. At each end there was a small collection of pieces of charcoal and blackish fruit. The center space was bare earth. There were no shells or other ornaments. There were no ferns nor vines as described by Gilliard (1959). The whole space was approximately three feet square. This bower fits much more the description of the avenue-builders and suggests that this species may be closer to *Chlamydera* than to the *Amblyornis* assemblage.

Amblyornis macgregoriae mayri Hartert

A single male was taken in the Ilaga. This male is subadult, lacking the crest feathers, which are used among the Dani commonly as an ornament, especially on the

woven cane jackets used in warfare. This may well be the reason for the rarity of this species.

Wing 135, culmen 25. Weight 145 g. Soft parts: iris brown, bill, upper mandible brown, lower pale greenish-brown, feet dark gray.

Dani name (Ilaga), "kwaaja;" Uhunduni, "atibec."

Chlamydera cerviniventris Gould

Found around Sentani Lake at Poee and Ifaar in areas of tall grass. One male is marked as having enlarged gonads in mid-October.

Local Papuan name, "norkumnor."

CAMPEPHAGIDAE, CUCKOO-SHRIKES

Coracina caeruleogrisea strenua (Schlegel)

Found commonly in the Baliem Valley. No moult or breeding indications.

Wing ♂ 169, 171, 177, ♀ 168-178.

Coracina boyeri boyeri (Gray)

My first experience with this species came at Bodim, July 28, when a large mixed flock of small cuckoo shrikes and a few other species was surprised feeding in substage trees on the edge of a village. The steep ridges and hog-backs of the locality prevented me from more than fleeting glimpses of the flock as they flew energetically from tree to tree. A pair of adults were collected which proved to be this species. The flock kept up a shrill and continuous series of whistles and warbles as they worked through the trees.

Wing ♂ 126, ♀ 124; weight ♂ 65, ♀ 62 g.

The male is moulting new primaries and primary coverts.

Coracina papuensis melanolora (Gray)

Three specimens from the Moluccas are interesting as one, a male from Batjan, is in fresh plumage with enlarged gonads, October 1. The second, an adult female from Halmahera, is in the midst of body and wing and tail moult, September 8. The third, a young male from Batjan, is moulting out of barred plumage into the first nuptial or first alternate plumage, September 26.

None of our other specimens from Misool or Kofiau show breeding activity or moult in January or May. Two November birds from Misool, however, are adults in body moult, indicating that the moulting season may extend later in Misool than the Moluccas to the west.

Wing ♂ ad. 150, 151, ♂ subad. 145, ♀ 146-151.5; weight ♂ 84, ♂ subad. 76, ♀ 82, 84 (2) g.

Coracina papuensis papuensis (Gmelin)

A subadult male in very worn plumage was taken September 22 at Poee correlating well with the equivalent subadult male from Batjan mentioned under the preceding subspecies. This smaller, darker, black-browed form was found in open woods near Sentani Lake and on Hollandia Bay.

Wing ♂ 137, 147, ♂ subad. 142, ♀ 137; weight ♀ 75 g.

Coracina longicauda grisea Junge

Found by us only in the Ilaga from 7500 to 9000 feet. A silent forest bird; none of our specimens being in breeding condition or moult.

Wing ♂ 168-170, ♀ 157, 168; weight ♂ 90, 95, 100, ♀ 80, 98 g.

Coracina tenuirostris mulleri (Salvadori)

A male moulting out of barred immature plumage was taken at Bodim, July 30, and an adult female from Holtekong in late September.

Wing ♂ im. 115, ♀ 130; weight ♂ im. 59 g. A male and a female immature of the race *grayi* from Batjan weighed: ♂ 64, ♀ 55 g.

Coracina morio incerta (Meyer)

A single not quite adult male with a few brownish-edged and white-tipped greater primary coverts was taken in September on Waigau.

Wing 110, culmen 23.5.

Coracina schisticeps schisticeps (G. R. Gray)

A male was taken on Misool in late November. In contrast to the published descriptions of *schisticeps*, the two central tail feathers are broadly tipped with black to a width of 22 mm along the central shaft, rather than with a central subterminal shaft spot. In this specimen the throat is dark slaty gray.

Wing 114, culmen 20.5; weight 47 g.

Coracina schisticeps reichenowi (Neumann)

A series of birds from Bodim from 26 July to 5 August include two adult males, one with a subterminal black spot on the two gray central tail feathers, the other with a broad black band (15 mm along the shaft in worn tail feathers), as in the specimen of *schisticeps* noted above. Another young male is moulting from brown into gray plumage, with newly grown individual gray feathers among the wing coverts and on the upper breast and belly. One male, July 26, is very worn. Both males have black-washed throats and the female has a chestnut brown crown.

Wing ♂ 114, 118, ♀ 104; weight ♂ 48, 49, ♂ im. 44, ♀ 46 g.

Coracina melaena melaena (Lesson)

Found from Arar on Sele Strait east to Humboldt Bay with no sign of moult or breeding activity in June, July, August or December. One female from Santani, July 16, has a few pale-tipped primary wing coverts remaining of juvenal plumage.

Wing ♂ ♂ 118, 118.5, ♀ ♀ 117, 120, 122; weight ♂ 50, 55, ♀ 50, 53, 63 g.

The female with the longer wing and heavier weight comes from Sele Strait. In its slightly larger size and in the tendency to paler coloration this specimen appears to approach the subspecies *batantae* (Gyldenstolpe and Mayr) in Gyldenstolpe (1955B), a form apparently overlooked by Mayr in his section of the Campephagidae in Check-list of Birds of the World (1960).

Coracina montana (Meyer)

A pair from the Baliem were taken in November. Wing ♂ 135, ♀ 133.

Grand Valley Dani name, "telu."

Camphochaera sloetii sloetii (Schlegel)

A male from Poeo on Lake Sentani extends still farther east the range of this beautiful Golden Cuckoo shrike. Rand (1941) had recorded the species from Bernhard Camp on the Idenburg River, an extension which was unfortunately overlooked in the Check-list of Birds of the World (1960). Although he cites slight differences in the brightness of plumage of his specimens compared to birds collected earlier by Jusup Khakiaj and myself in the Vogelkop, I cannot see that these differences are really significant and consider this a uniform population. Wing ♂ 105. One of our Vogelkop specimens now at Yale (noted in Mayr and de Schauensee, 1939B) with a slightly less intensely-colored rump, but no appreciable other differences, has a wing measurement of 104.

Lalage atrovirens atrovirens (Gray)

Birds from Misool, the type locality, and Arar on Sele Strait, were collected in November, December and January. One November and one December bird appear to be in rather worn plumage. A December ♂ male from Arar has slightly enlarged gonads. Additional specimens were taken east to Lake Sentani.

Wing ♂ ♂ 95-98, ♀ 94-96; weight ♂ 30-32, ♀ 32-38 g.

MUSCICAPIDAE, OLD WORLD INSECT-EATERS
TIMALIINAE, BABLERS

Melampitta lugubris rostrata Ogilvie-Grant

Three females of this obscure skulking chat-like babbler were taken in dense beech-podocarp moss forest from 7500 to 11,000 feet in the Ilaga. One specimen weighed 45 g.

Wing ♀ 86, 87, 89; tail 55, 56, 57; culmen 20.5, 21 (2).

It would appear from the measurements of specimens published at various times that it is just possible to separate two populations of this species in New Guinea. Typical *lugubris* of the Arfak Mountains of the Vogelkop appears to be small; wing ♂ ♀ 78-85, tail 43-53. The race *rostrata* was named by Ogilvie-Grant on the basis of a single male from the Utakwa River on the southern slope of the central chain as having a longer culmen, 24 mm. Rand's series (1942) were said to have shorter bills as were the specimens measured by Mayr and Gilliard (1952) in creating their subspecies, *longicauda*. The measurements, however, of eastern birds as compared with western Vogelkop birds would seem to be just tenable, (measurements from published sources):

Vogelkop, males and females

	wing	tail	culmen
<i>lugubris</i>	78-85	43-53	
type of <i>rostrata</i>	89	52	24
central mountains	83-95	51-67	20-22

Unfortunately many of these publications such as that of Mayr and Gilliard (*ibid.*) leave much to be desired in the incompleteness of the range of measurements (only tail measurements are given in their publication). In addition it is unfeasible to list the distribution of their *longicauda* as including part of the mountain range from which the type of *rostrata* must have come (Utakwa River, 4200 feet, south slope of the Nassau Range). Our Ilaga birds are perhaps 35-40 miles as the crow flies, northeast over the main ridge. The Archbold Expedition specimens from the upper Idenburg and Bele River area of the Baliem are less than 50 miles east of the Ilaga. All these specimens group together in size, except for the published difference of 2 mm in culmen length of one specimen (the type of *rostrata*). On this basis it seems impossible to maintain "*longicauda*" as anything more than a tendency towards a continuous cline in size. Typical *lugubris* then would occur in the Vogelkop. The population *rostrata* would then include birds from the Weyland Mountains east along the central chain to the Wharton Range.

Crateroscelis murina fumosa Ripley

Compared to mainland New Guinea birds this is a small subspecies, otherwise not greatly differing in color.

Wing ♂ ♀ 52.5-54; tail ♂ 33-35; culmen 16, ♀ 15 (2); weight ♂ 15, ♀ 12, 13 g.

The male bird at least makes a wren-like "tchick tchick" as it scuttles and hops about in the undergrowth.

Crateroscelis murina murina (Sclater)

Found at Bodim and along the Tami River in brush piles or dense undergrowth in the forest.

Wing ♂ ♀ 54-60, tail ♂ ♀ 37-41, culmen ♂ ♀ 15 (4); weight ♀ 11, ♂ 15 g.

Crateroscelis robusta sanfordi Hartert

A common species in forest in the Ilaga. Also taken in the Baliem. One male, August 31, has enlarged gonads.

Wing ♂ ♀ 58-68; weight 19-21, 25 (1) g.

Androphobus viridis (Rothschild and Hartert)

Some ten specimens of this rare, inconspicuous mountain olive-green babbler are known in collections. We secured a pair in early September in the Ilaga in mountain forest without unfortunately hearing any calls or other life history attributes of the species. Neither bird was in breeding condition or showed signs of moult. The male's distinct black bib and white moustache is replaced in the female with a grayish wash over the olive-green.

Wing ♂ 68, ♀ 64.5; tail ♂ 70, ♀ 67, culmen ♂ 15, ♀ 14. Weight ♂ 32, ♀ 29 g.
The legs and feet of these birds were grayish-brown in life.

Ptilorrhoa caerulescens caerulescens (Temminck)

A male from Misool confirms the existence of this species on that island. I saw the bird on a trail in heavy forest in a patch of sunlight and was struck by the brilliance of the blue plumage. Our specimen shows wing moult in February.

Ptilorrhoa caerulescens neumanii (Mayr and de Schauensee)

A juvenile moulting into adult plumage and an adult were collected at Bodim July 31 and August 1.

Weight ♂ ad. 52, ♀ juv. 49 g.

Ptilorrhoa leucosticta centralis (Mayr)

A pair and a juvenile were taken in the Ilaga in late August-early September. The juvenile, taken August 20, is warm brown above, a few russet feathers appearing on the back and rump, and with a brownish-black tail. The wing spots are isabelline rather than white. Below, the plumage is frayed and fluffy, olive-brown in color with white on the center of the belly. A few white feathers are beginning to appear in the auricular region.

Wing ♂ 81, ♀ 75; weight ♂ 44, ♀ 46, juv. 36 g.

Orthonyx temminckii dorsalis Rand

An immature post-nestling from the Ilaga is just moulting out the tail September 10. It is buffy brown above and below with broad black edges to the back feathers and narrower black edges below. The female of August 31 is also moulting the tail feathers.

Wing 83; weight 65 g.

Pomatostomus isidori isidori (Lesson and Garnot)

A male in breeding condition and a female with ovaries granular were taken on Misool November 13 and 20. This species flocks as do babblers and scimitar babblers in Southeast Asia, flying one after the other clumsily into tangles of vines in the substage forest, churring and chuckling to each other as do their Sundaland relatives. One non-breeding female is moulting on the throat November 13. A single specimen from Waigeu has already been reported on (1957).

Wing ♂ 115, ♀ 109-118; weight ♂ 73, 81, ♀ 61-81 g.

Additional specimens taken at Bodim and the Tami River on the north coast might as well be *isidori* except for one rather dark specimen from Holtekong with a strong tendency to *calidus*. Following Rand (1942) I call these all *isidori*. Two males from the Tami are in breeding condition June 30 and July 3, and another from Holtekong September 23. If these specimens represent two different cycles, regression and reconstitution of the gonads must be very rapid. Two birds from Bodim and the Tami River July 4 and 26 are immatures with short bills and rather frayed-appearing plumage.

Wing ♂ 108, 110, 116; weight 72, 82 g.

Ifrita kowaldi brunnea Rand

A single immature female from the Ilaga at 8500 feet, taken September 7, gives me no clue as to the status of this subspecies which Junge (1953) doubted on similarly

slender grounds. This bird was not long out of the nest though capable of flying. But the underparts, which are sandy buff color, except on the flanks, are soft and fluffy. The nape only is blue.

Soft parts: iris blue, bill dark brown, lower mandible and tip of upper mandible orange brown, feet yellowish olive. Weight 22 g.

TURDINAE, THRUSHES

Saxicola caprata belensis Rand

A large series of this chat was obtained in the Ilaga and the Baliem where it is common in tall grass near cultivation, or in bushes near open trails. There is no difference in size or color between the two populations. Birds just out of the nest were collected in late August and early September. A male moulting into adult black plumage was collected in mid-August. Other males with traces of brown flecking on wing coverts and lower breast were taken in March. A female with granular ovaries was taken in mid-August.

Wing ♂ 76.5-82 (79.9), ♀ 75-80 (78); weight ♂ 22-28, ♀ 25-28, ♂ (moulting into adult plumage) 30 g.

Saxicola caprata aethiops (Sclater)

A male from Ifaar on Lake Sentani, July 17. Wing 70.

Amalocichla incerta olivascentior Hartert

A single female from the Ilaga agrees in color with Baliem birds. Wing 79; weight 38 g.

MALURINAE, WREN-WARBLERS

Malurus alboscapulatus aida Hartert

Males in breeding condition of this little black wren-warbler were taken in June, July and October in the Humboldt Bay area along the Tami River and near Lake Sentani. A young male taken in September has splotched black and white underparts and a white throat. A September female is in very worn plumage.

Wing ♂ 46-48, ♀ 45.5; weight ♂ 10 g.

Malurus alboscapulatus randi Junge

A single male obtained from Dani hunters by Miss O'Brien in the Swart Valley proves in its measurements to belong to the subspecies *randi* described by Junge from the Wissel Lakes.

Wing 52, tail 43.

Swart Dani name, "bininggatlok."

Malurus alboscapulatus balim Rand

Collected in the Baliem Valley and the Ilaga up to 7500 feet. A February female is very worn and a male is moulting the rectrices in March. No secure data on breeding was obtained.

Wing ♂ 51-52, ♀ 48; tail ♂ 50, 52, ♀ 56; weight ♂ 15 g.

Todopsis cyanocephala cyanocephala (Quoy and Gaimard)

Our specimens from Sele Strait east to the Tami River confirm that *dohertyi* is not a form worthy of recognition. This beautiful blue fairy-wren was erratically distributed in secondary scrub or bush-jungle in coastal areas, although we met with it as far inland as Bodim. Males in breeding condition were encountered in September and October, and birds with apparently regressing gonads, granular ovaries and somewhat enlarged testes, were taken in December on Sele Strait in company with a well-grown juvenile. The juvenile, a female, has a black cap, soft powder-blue tinted tail with white tips, dull

chestnut back, and below possesses a white throat and white-washed buffy brown under surface, the white extending over the breast and abdomen.

A male moulting into adult plumage was taken July 8, presumably a bird just under a year old.

These birds skulk in thick bushes, make a "tschik" alarm note. The song is short but effective, ending in a whip-lash-like phrase. A nest with four young in a bush about three feet from the ground was gourd-shaped, made of strips of fern, dead leaves in strips, and pieces of moss, all closely woven together. The entrance hole was on the side and the nest was closed above.

Wing ♂ 59-62, ♀ 54-57; weight ♂ 14, 16, ♀ 10 (non-breeding), 14 (ovaries granular) g.

Todopsis wallacii Gray

A pair were taken on Misool in March. Wing ♂ 46, ♀ 47.5.

Chenoramphus grayi (Wallace)

This beautiful pale blue fairy wren keeps to similar undergrowth and bushes as *Todopsis*, but was met with by us only at Bodim in original forest. In the still jungle after heavy rain, we would occasionally see these birds darting like babblers from bush to bush, sometimes on the ground, especially on exposed tree roots, often calling, a low chittering "cheep, cheep."

Wing ♂ 59, ♀ 55-58; tail ♂ 60, ♀ 51-56; culmen ♂ 19, ♀ 17-18.5; weight ♂ 14, ♀ 12-15 g.

Clytomyias insignis oorti Rothschild and Hartert

This rare hill wren warbler was found in forest in the Ilaga. One female had granular ovaries August 26, and a male of the same date had slightly enlarged gonads. Perhaps these were birds with regressing gonads, as September birds showed no trace of breeding condition.

Wing ♂ 58, 60, ♀ 56, 60. Weight ♂ 13, 14, ♀ 12, 14 (ovaries granular) g.

SYLVIINAE, GRASS WARBLERS

Acrocephalus arundinaceus australis (Gould)

Occasionally found in dense grass along the edges of small streams or thick scrub growing on wet marshy places in the Ilaga. No breeding activity noted. One male, September 9, was moulting body plumage and the fully-developed rectrices had traces of sheath.

Wing ♂ 68, 70, ♀ 65; tail ♂ 61 (worn), ♀ 61; culmen ♂ 19-20, ♀ 18. Weight ♂ 19 (moult), 22, 23, ♀ 17 g.

Megalurus timoriensis macrurus (Salvadori)

Taken in the Ilaga, the Baliem and the Swart. A juvenile female from the Ilaga was collected September 7. The bird has a notably brownish, not rufescent crown, with broad black streaks, and is strongly washed with yellow below with warm buffy flanks and black shaft flecks on the feathers of the lower neck. The black back streaks become more pronounced with wear. A worn specimen from the Baliem has a pale, brownish crown and traces of a yellow wash on the throat. Two males, taken September 1 and 10 are in breeding condition although a female of similar date is not. Perhaps this is a stage of gradual post-nuptial regression. The birds were singing on high grass stems, and, as always, difficult to approach. On one occasion I watched a grass-warbler scuttle mouse-like on the ground through a patch of cultivated sweet potato plants.

Wing ♂ 74, 77.5, ♀ 67; tail ♂ 97.5, 98, ♀ 95. Weight ♂ 30, 35, ♀ 29, ♀ juv. 34 g. Ilaga and Swart Dani name, "lijok;" Uhunduni name, "wingol," "tjoukoulbouc."

Cisticola exilis diminuta Mathews

A series of twenty-one grass warblers from the Lake Sentani area, up to 4500 feet in the Baliem and west Baliem Valleys (including Bokindini), inclines me to feel that the name *polionota* Mayr (1934, New Britain) should not be used for the lowland birds of the north coast as suggested by Rand (1942). None of our specimens differ significantly *inter se* between the sea coast and the mountain valleys. Rand's comment (*ibid.* p. 472) was based on a single female from Hollandia.

Juveniles in strongly yellow-washed plumage were collected in the Baliem in March, and a juvenile with washed-out, pale yellow underparts was taken at Sentani in mid-July. A male in fresh plumage with slightly enlarged gonads was taken at Bokindini in mid-August.

Wing ♂♂ 46-48, ♀ 41, 42.5.

Sericornis spilodera spilodera (Gray)

An unobstrusive warbler of deep thickets in heavy jungle near Bodim. A male, August 3, had enlarged gonads, although our females showed no sign of breeding activity.

Wing ♂ 60 (2), ♀ 52, 55; soft parts: iris brown, bill pinkish brown, feet brown, grayish-brown. Weight ♂ 11, ♀ 10, 12 g.

Sericornis beccarii cyclophum Hartert

Found at Bodim and in the scrub-covered foothills in back of Hollandia harbor.

Wing ♂ 56, 56.5, ♀ 53.5; weight ♂ 14 (2) g.

Sericornis nouhuysi nouhuysi van Oort

The commonest warbler in the Ilaga; also found in the Baliem, in heavy forest. An immature bird taken August 27 is virtually indistinguishable from the fuscous adults, only duller, less rufous above and below, with a short thin bill and much shorter wing. A March male from the Baliem was in breeding condition.

Wing ♂♂ 61-66, ♀♀ 59-65; weights ♂ 19-25, ♀ 14-20, im. 13 g.

Sericornis perspicillatus Salvadori

Not uncommon in the Ilaga and Baliem where we found them in clumps of casuarinas or bushes often on the edge of village clearings. They darted actively through the foliage making soft seeping noises. Two adult males were in breeding condition August 23 and September 12, and a female had granular ovaries August 23.

Wing ♂♂ 51-56, ♀ 51-55; weight ♂♀ 9-14 g.

Sericornis papuensis bürgersi Stresemann

A less common species than the preceding, but also found in the Ilaga in a variety of habitats including trees and bushes in the open as well as forest. One juvenile not long out of the nest was taken August 25. It has dark tips to the crown feathers giving a squamated appearance. The whole underparts are olive yellow, particularly bright on the throat. A second juvenile taken September 6 is less brightly colored, but also yellowish (is the yellow color perhaps rather transitory, fading as the bird develops and becomes more active?). The only buffy color on the underparts is on the undertail covers.

Soft parts: iris dark brown ("reddish-brown in one female"), bill dark brown, base of the lower mandible pale brown to brownish-yellow to white, feet dull yellow to pale brown, legs brown.

Wings ♂♀ 54-57; weight 10-11 (juv.) 9 g.

Gerygone cinerea Salvadori

Two males, one in breeding condition August 25, were taken in the Ilaga at 7500 feet. They were both in casuarinas and open clumps of trees near villages, mixed with small flocks of feeding *Sericornis* species. Both birds have traces of dark terminal spots on the white throat feathers.

Wing 51, 53; weight 9, 11 g.

Gerygone chrysogaster chrysogaster Gray

A common warbler at Bodim, also found near Humboldt Bay, always in thick substage forest. Males in breeding condition were taken in July and August, but all females secured were not breeding.

Wing ♂ 53-54.5, ♀ 49-53; weight 7-11 g.

Gerygone chrysogaster notata Salvadori

A female from Tamulol, Misool is our only record of this differently colored form. Compared to *chrysogaster* this subspecies is more bronzey-brown with a yellowish wash on the throat and yellow edges to the greater wing coverts.

Soft parts: iris dull red, bill upper mandible black, lower whitish flesh, feet pale grayish flesh; wing 51; weight 7 g.

Gerygone chloronota cinereiceps (Sharpe)

A pair in breeding condition were taken December 5 at Arar on Sele Strait.

Soft parts: iris red, bill black, feet blackish gray; wing ♂ 49.5, ♀ 44.5; weight 6 (2) g.

Gerygone palpebrosa wahnesei (Meyer)

This is a difficult species to see or to collect. These small warblers seem to occur in flocks of less than ten individuals, moving quietly in the dense epiphytic covering of isolated trees in clearings or in the tops of the evergreen canopy. By chance an encounter at a feeding tree is as much as a field naturalist can hope for. At Bodim we saw several small parties of these warblers from which I collected one pair. The males' black throat is visible under proper light conditions for a good distance. No signs of breeding or moult in early August.

Soft parts: iris red, bill black, feet ♂ blackish-brown, ♀ dark gray.

Wing ♂ 51, ♀ 50; weight ♂ 12, ♀ 9 g.

Gerygone magnirostris occasa Ripley

A single specimen taken on Kofiau has already been reported (1959B).

Gerygone magnirostris conspicillata (Gray)

A female of this brown form with buffy-colored chest collar was taken at Arar December 5, in the very tall mangroves lining the shore.

Wing 54; weight 9.

Gerygone magnirostris affinis Meyer

A much paler, more grayish, less brownish form than the preceding subspecies, found by us in high casuarinas on the beach at Holtekong in early July. The warblers had a soft call. One male was in breeding condition.

Wing ♂ 52-54 (4); weight 9-11 g.

Gerygone ruficollis insperata De Vis

As Gyldenstolpe reported for his Wahgi Valley birds (1955A), we met this species in the Ilaga in small parties in occasional trees on the edges of cultivation, twittering and nervously active. Our Ilaga birds are similar to Baliem specimens taken by Jusup Khakiaj. Males were in breeding condition in the Ilaga August 21-September 8, and Jusup has marked one specimen March 22 as in breeding condition (?). Subadults with a yellow wash on the underparts were taken in late August in the Ilaga.

Wing ♂ 55-58.5, ♀ 56-59; weight ♂ 6 (1), 10 (4), juv. ♀ 5 g.

Phylloscopus trivirgatus giulianettii (Salvadori)

Said to be breeding in the Baliem in March; our Ilaga birds are non-breeding. No moult or wear was observed. These warblers have a long drawn-out series of single whistling notes on a descending scale, rather pretty but mournful. The notes remind me of the song of a North American white-throated sparrow, *Zonotrichia*.

Wing ♂ 55-60, ♀ 52-54; weight ♂ 7, ♀ 8-10 g.

MUSCICAPINAE, FLYCATCHERS

Peltops blainvillii (Lesson and Garnot)

Found on Misool and at Bodim on forest edges, usually solitary, hawking for insects from an exposed tree. One November male (Misool) is in very worn plumage.

Wing ♂ 95-97, ♀ 90; weight ♂ 29-35, ♀ 34 g.

Peltops montanus Stresemann

A male adult from the Ilaga and a juvenile just out of the nest from the Swart, the latter taken in late summer (August presumably) are our only specimens.

Wing ♂ 111; weight 70 g.

Swart Dani name, "nelawit."

Rhipidura threnothorax threnothorax Müller

Taken on Misool (Ripley, 1959B) and near Hollandia on the Tami and at Holtekong in heavy forest. Late June and July males were in breeding condition and in rather worn plumage. The Misool bird (November 14) was also in breeding condition and in fresh plumage, hence somewhat darker and more richly colored on the upperparts.

Wing 77.5-81; weight 19 (3) g.

Rhipidura leucothorax leucothorax Salvadori

A male from Sentani Lake has a wing of 80 and weighed 20 g.

Rhipidura rufidorsa rufidorsa Meyer

Common on Misool and seen twice at Bodim in mixed feeding flocks in primary forest. Our Bodim specimens are paler than Misool birds on the upper back and on the chest. Rand (1938B) had previously noted the variability of color within the typical forms. Misool males were in breeding condition in November and January. One Misool male (November 13) has almost completed renewing the rectrices.

Wing ♂ 64-67, ♀ 60-63; weight 9-13 g.

Rhipidura brachyrhyncha devisi North

A small series includes one of Mayr and Rand's (1937, p. 164-168) Type II birds and 3 Type I. The latter has the rufous tail, broadly barred black, the former the grayish tail with white shafts. One male with the Type I tail, broadly barred black, is so rufous above and below that it appears almost like a hybrid with *R. atra*. However, the wing coverts are dark brown with rufous edgings as in *brachyrhyncha*, not all rufous as in the female of *atra*. It would be valuable to study these two species to determine whether on occasion hybrids may occur. No specimens were breeding. This was a common bird of dense forest from 7500-8000 feet.

Wing ♂ 70, 71, ♀ 67, 68; weight ♂ 9-14, ♀ 10, 11 g.

Rhipidura atra atra Salvadori

Common in the Baliem, but only one female secured in the Ilaga. Moulting birds were taken in February. One young male is moulting into the black plumage.

Wing ♂ 74-78, ♀ 71-73; weight ♀ 10 g.

Rhipidura hyperythra mülleri Meyer

Found only at Bodim, one male in late July had enlarged gonads while the rest of our series showed no breeding indications. One male is subadult in late July and has very slightly enlarged gonads.

Wing ♂ 78, ♀ 73-76, ♂ 79, subad. ♂ 71; weight 10-15 g.

Rhipidura albolimbata albolimbata Salvadori

The commonest fantail flycatcher in the Ilaga. Individual males and females were in breeding condition or not in breeding condition between August 19 and September 3, and juvenile specimens just post-nestling and fully on the wing were taken August 29

and 31. The juvenile has warm brown patches on the back and rump, brown tips to the secondaries and brown-tipped chest and undertail coverts.

Wing ♂ 78.5-84, ♀ 76, 81, ○ 79, 80; weight ♂ ♀ 10-15, juv. 9 g.

Rhipidura rufiventris vidua Salvadori and Turati

Kofiau (Ripley, 1959B).

Rhipidura rufiventris gularis Müller

Males in breeding condition were taken July 4 and 5 on the Tami River. A male was in breeding condition on Waigeu in September, and two birds, a male and female were in partial breeding condition on Misool in mid-November. Perhaps there is some variation in the breeding season between the western and north coast population. A female from Misool is moulting the rectrices in February.

Wing ♂ 85-90, ♀ 82-86; weight ♂ 17 (2), ♀ 19 g.

Rhipidura leucophrys melaleuca (Quoy and Gaimard)

The willy Wagtail was locally common in coastal areas, in breeding condition in June and mid-October (Batjan). The Batjan date coincides with the possible later breeding date of some birds in the western islands, west of the New Guinea mainland. The June date (Tami River) is two months later than the April dates reported by Rand (1942) for the Hollandia area.

Weight ♂ 30, 33, ♀ 25-28 g.

Monarcha rubiensis (Meyer)

A female from the Baliem is an altitude record for this uncommon species. Presumably taken at about 4500 feet, this bird has a few white feathers on the hind part of the dark gray crown. A fleshy eyewattle of soft skin and a tendency to a frill makes the separation of the genus *Arses* for the species *telescopthalmus* and *insularis* seem entirely unnecessary to this author. Wing 84.

Monarcha alecto chalybeocephalus (Garnot)

This coastal species was found by us as high as 1575 feet above sea level on Batjan (subspecies *alecto*). In New Guinea we met it only in heavy forest or cut-over scrub from sea level to 400 feet above sea level. Birds were in breeding condition in November, and in September on Batjan. One male taken in early July at Holtekong had somewhat enlarged gonads, perhaps regressing. A young male in female plumage and a juvenile female, both birds with dark gray rather than deep iridescent blue crowns, were taken on Batjan September 30. The birds appeared to be paired up.

Wing ♂ 87-91 (*alecto*, Batjan 76-82), ♀ 79-81 (*alecto*, Batjan 76); weight ♂ 16, 25, 26 (*alecto*, Batjan 15, 19, 20 g).

Monarcha frater periophthalmicus Sharpe

A single specimen from the Swart Valley at 4500 feet. Swart Dani name, "pittetuk."

Monarcha manadensis (Quoy and Gaimard)

A juvenile as well as adult females were taken at Bodim. The juvenile corresponds to the plumage described by Rand (1942, p. 481) with the partially gray throat and brownish wash on the breast and flanks.

Wing ♀ ad. 82, ♀ juv. 78.5; weight ♀ 23, ♀ juv. 21 g.

Another female from Bodim appears to be a hybrid between this species and *guttula*. Above it shows the fluffy black forecrown plumes of *guttula*, but is much darker gray on the upper surface, dark bluish gray with a hint of the metallic sheen of *manadensis*. The wing coverts lack white spots as in *guttula*, also the specimen lacks *guttula*'s white tips to the lateral tail feathers. Below the bird, with black throat and white underparts, is similar to both *guttula* and *manadensis*.

Wing 78.5; weight 17 g.

Monarcha guttula (Garnot)

Common in lowland areas, often in mixed feeding parties in heavy forest. Birds were taken in breeding condition at Bodim in late July and August, Misool in November, and on Waigeu in September. Juvenile specimens were taken on Waigeu in September and at Bodim August 4.

Weight ♂ 17-20, ♂ 15, 21, juv. ♀ 19 g.

Monarcha julianae Ripley

The unique type and its specific relationships were discussed by me earlier (1959B).

Monarcha chrysomela melanonotus Sclater

Misool and Waigeu produced a small series of this species, specimens of which were in breeding condition in September and November.

Wing ♂ 73-77, ♀ 74; weight ♂ 18 g.

Monarcha chrysomela aurantiacus Meyer

Found at Bodim. Wing ♂ 70, 72, ♀ (July 26 moulting); weight ♂ 16, 22, ♀ 16, 18 g.

Monarcha telescopthalmus telescopthalmus (Garnot)

A male in breeding condition was taken on Misool in November. A male moulting from juvenal into the dark adult plumage was taken at Arar December 3. The tail is still brown as well as the lower throat and the primaries. Evidently these are the last of the old plumage to go. A young male can be distinguished from an adult female by having a darker cap and a more distinct nuchal ring, paler than the adjacent olive-rufous back.

Soft parts: iris brown, ocular skin periwinkle blue, bill and feet bluish-gray.

Weight ♂ 19 (2), juv. ♂ 19, ♀ 20 g.

Monarcha insularis (Meyer)

Breeding birds of both sexes were taken in July, August and September. A juvenile from Bodim, July 29, has down feathers on the vent area and pale-tipped feathers on crown, back and wing coverts.

Wing ♂ 75-80, ♀ 75-77; weight ♂ 18-20, ♀ 19, 20 g.

Machaerirhynchus flaviventer albigula Mayr and de Schauensee

Found at Bodim where males were in partial breeding condition in late July. This is a form with a whitish rather than yellow throat in the female and immature plumage.

Wing ♂ 58-60, ♀ 57, 58; weight 10-12 g.

Machaerirhynchus nigripectus saturatus Rothschild and Hartert

Of the two males and a female taken in the Ilaga, one male, August 20, is in breeding condition.

Wing ♂ 65, 68.5, ♀ 63.5; weight ♂ 10, 14, ♀ 12 g.

Eugerygone rubra saturatior Mayr

This rare little Ruddy flycatcher is recorded for the first time from the Nassau Range. Both our Ilaga birds were brought in by Dani hunters. The male, not in breeding condition, is moulting into the reddish plumage, most of the back feathers being warm brown with pale shaft streaks. The underparts are warm buffy brown throughout with occasional white feathers along the angle of the mandible on the left side only. The other specimen, unsexed, is presumably a female, a brown cap being followed by an olive-green back, and dull grayish white underneath, the flanks and thighs being warm brown.

Soft parts: feet (♂) orange, legs brown, (♀) brownish yellow, legs dark brown. Wing ♂ 57, ♀ 60; weight ♂ 11, ♀ 9 g.

Ilaga Dani name, "kelelambo."

Microeca flavovirescens cuicui (De Vis)

A common flycatcher in the substage on Misool and at Bodim, these greenish-yellow birds were a feature of the mixed feeding flocks. Two males were in breeding condition August 6 at Bodim, and mid-November on Misool.

Wing ♂ 77-82, ♀ 73-80; weight ♂ 14-19, ♀ 12-18 g.

Microeca papuana Meyer

Males of the montane yellow flycatcher were in breeding condition in the Ilaga in early September. One juvenile differs from adults in having pale yellow tips to the greater primary and secondary wing covert, secondaries and a few of the lateral flank feathers, and in having pointed tips to the rectrices.

Wing ♂ 75-80, ♀ 73, 77; weight 14-15 g.

Monachella mülleriana mülleriana (Schlegel)

Found in the Swart Valley.

Swart Dani name, "pippingganggun."

Petroica bivittata caudata Rand

A single unsexed bird from 12,000 feet on the Ilaga plateau belongs to this race extending the known range for *caudata* to the Nassau Range. This is the sixth known specimen of this subspecies, four having been collected by the Archbold Expedition and one by Versteeg in the Hubrecht Mountains. Wing 69.5; weight 9 g. It is worth noting that the black legs and feet contrast with yellow pads.

Poecilodryas brachyura dumasi Ogilvie-Grant

Taken at Bodim in low substage and bushes in dense jungle.

Soft parts: iris dark brown, bill black, feet ♂ whitish brown, brownish gray, ♀ flesh color. Wing ♂ 76, 78, ♀ 74, 75; weight ♂ 21, 30, ♀ 25 (2) g.

Poecilodryas hypoleuca hypoleuca (Gray)

A pair were collected on Misool, the male having slightly enlarged gonads in mid-November.

Wing ♂ 79, ♀ 70; weight ♂ 21, ♀ 17 g.

Poecilodryas hypoleuca hermani Madarász

A loud whistled call in the undergrowth in dense forest marked this species of which we only secured males on the Tami River and at Bodim.

This is a definitely more blackish form than typical *hypoleuca*, more purely white on the underparts, with a wider, more prominent white streak from the lores to over the eye.

Wing 76.5-79; weight 21, 24 g.

Poecilodryas albonotata griseiventris (Rothschild and Hartert)

Found in forest in the Ilaga, a new record for the Nassau Range. One female has a few individual juvenal brown feathers scattered on the wings, flank and thigh. Two males have enlarged gonads August 27 and September 1.

Wing ♂ 112, 114, ♀ 102, 104; weight ♂ 38, 40, ♀ 30, 39 g.

Ilaga Dani name, "kanili."

Peneothello sigillatus quadrimaculatus (van Oort)

A few specimens from the Ilaga were seen in dense forest from 8000 to 11,000 feet. One male had enlarged gonads August 29, and a streaked-brown juvenile with soft, fluffy underparts and dull blackish-brown back and pointed rectrices was taken August 31.

Wing ♂ 106 (2), ♀ 108, ♂ 111. These measurements run larger than those of Rand, but hardly significantly so. Weight 28-33 g.

Peneothello cryptoleucus albidior (Rothschild)

A pair of this obscure sibling species was taken September 3 and 7 in the Ilaga in the same habitat as *cyanus* at 7500 feet. This is a considerable eastward extension for the species. The lower abdomen feathers are terminally dull, whitish gray.

Wing ♂ 89, ♀ 86; weight ♂ 19 g.

Peneothello cyanus atricapilla Hartert and Paludan

Found in the Baliem at 4500, and in the Ilaga from 7500 to 9000 feet above sea level. Males were in breeding condition from 23 August to 13 September. One female (none of which showed enlarged gonads) has some streaked brown feathers on the throat and flanks.

Wing ♂ 90-93, ♀ 84-87; weight ♂ 25-31, ♀ 24-30 g.

Pachycephalopsis poliosoma balim Rand

A series were collected near Wamena in the Baliem. One March male is recorded as in breeding condition. In general these birds appear slightly darker than *balim* in the American Museum collection, but these skins may have faded slightly. They agree with Rand's measurements for *balim*.

Wing ♂ 104-108, ♀ 100-108.

Grand Valley Dani name, "nabulak," "wenabulak."

PACHYCEPHALINAE, WHISTLERS OR THICKHEADS

Pachycephala pectoralis balim Rand

Very common at the 4500 foot level from whence we have a large series. Males taken in February are noted as being in breeding condition. An immature bird taken in November has a rusty brown head, wing coverts, flanks and throat. A nestling was taken in November. It is all-over warm brown, about the size of a babbler, *Crateroscelis sanfordi*, covered with down and pinfeathers.

Wing ♂ 86-92, ♀ 78-91.

Grand Valley Dani name, "hokan."

Pachycephala schlegelii viridipectus Hartert and Paludan

Common in forest in the Ilaga from 7500 to 11,000 feet. Males were in breeding condition in late August and early September. One young male, September 4, is in complete female plumage with no trace of juvenal brown feathers.

In the female plumage there is considerable variation in the degree of lightness or darkness of the throat patch, some individuals having much less heavy banding on the throat. Immature birds patched with brown, from nearly all over, to mere flecks on the breast or crown, were taken from mid-August to mid-September throughout the altitudinal range. One such male, the most heavily suffused with brown had slightly enlarged gonads.

Wing ♂ 85-90, ♀ 84-88; weight ♂ 21-30 (25), ♀ 20-29 g.

Ilaga Dani name, "wuttunoo."

Pachycephala lorentzi Mayr

Specimens of this little-known sibling species were taken in the Ilaga at 7500 feet. As Rand explains (1941), males and females are similar in general to the female of *P. schlegelii*, but lack the green chest band, the gray of the lower throat shading into the greenish-yellow of the upper abdomen. In addition the bill is smaller and more slender. One male was in breeding condition August 29.

Wing ♂ 82.5-86, ♀ 81-83; culmen 14-15. In *schlegelii* the culmen runs from 15-16, but is noticeably stouter in proportion. Weight 18-24 g.

Pachycephala simplex griseiceps Gray

A pair were taken on Misool.

Wing ♂ 76, ♀ 78; weight ♀ 24 g.

Pachycephala simplex jobiensis Meyer

This form from the northeast coast of Geelvink Bay east to Astrolabe Bay is larger, more olive-toned above and brighter yellow below, especially on the vent. Found in coastal swamps as well as deep forest. One immature female taken August 5 at Bodim has the secondaries edged with dull rufous.

Wing ♂ ♀ 78-89; weight 22-26 g.

Pachycephala phaionotum (Bonaparte)

Two females from Kofiau are our only record of this mangrove or beach scrub species.

Pachycephala monacha dorsalis Ogilvie-Grant

Two males and a female of this rare species were taken near Wamena in the Baliem whence it has not previously been recorded. The Archbold Expedition failed to find it in forest at mid-altitudes (i.e. 4500 feet).

Wing ♂ 85.5, 86.5, ♀ 85 (moult).

Unfortunately Jusup failed to date these specimens, thus preventing a pinpoint on the moult of the female.

Pachycephala rufinucha niveifrons Hartert

A dense thicket species in the Ilaga from 7500-8000 feet. A juvenile male (September 10) is all brown with pale shaft streaks on the head and wing coverts and a few white feathers coming in on the throat and mid-breast. The buff undertail coverts are downy.

Wing ♀ 86; weight 44, 45 g.

Myiolestes megarhynchus misoliensis Meise

In Misool found in heavy underbrush near clearings. A male taken November 13 is in breeding condition. These birds are richly warm-buff below and warm-olive-brown above.

Wing ♂ 89, 94, ♀ 87; weight ♂ 39, ♀ 37 g.

Myiolestes megarhynchus idenburgi Rand

A single specimen from the Swart Valley appears to belong to Rand's form described from the Idenburg River to the east. Wing 98.

Myiolestes megarhynchus hybridus (Meise)

Collected at Bodim and east to the Tami River in heavy forest. Males were in breeding condition in July.

Wing ♂ 93, 97, ♀ 89, 93; weight ♂ 45, ♀ 39 g.

Pitohui kirhocephalus uropygialis (Gray)

Common in heavy forest on Misool, some evidence of breeding was found in mid-November. One male was in breeding condition and a female had granular ovaries. Two females were in moult at the same season, presumably young birds of the year. Both have noticeable dark brownish streaked feathers on the crown.

Wing ♂ 120, 124, ♀ 119; weight ♂ 97, 105, ♀ 93, ♀ (juv.) 95, 103 g.

Pitohui kirhocephalus meyeri Rothschild and Hartert

I agree with Rand (1942) that *proteus* Hartert cannot be maintained. Our series from the Tor River east to the Tami contains all minor gradations of color which might otherwise be thought to separate these forms. This is an intermediate gray headed population showing considerable variability in the coloration of the back and the intensity of the underparts. On the Tami River in late June and early July we found males in breeding condition, perhaps just post-breeding season, as a full-grown nestling was collected with well-developed wings but downy underparts and tail feathers in sheath.

This species has a pleasant variety of musical, rather thrush-like calls, as well as harsh jay-like alarm notes.

Wing ♂ 102-112, ♀ 101-109; weight ♂ ♀ 67-85, nestling 60 g.

Pitohui dichrous dichrous (Bonaparte)

A single unsexed juvenile specimen from the Swart Valley.
Swart Dani name, "kiwula."

Pitohui ferrugineus ferrugineus (Bonaparte)

Common on Misol throughout heavy forest. This can be an elusive bird in spite of its size, hiding in vines which often completely cloak the trunk of mid-stage trees. Birds were in moult in January and February.

Wing ♂ 133-147 (140.5), ♀ 137 (2); weight ♂ 97, 112, ♀ 92, 96 g.

Pitohui ferrugineus heurni Hartert

A male in breeding condition from Bodim in late July is showing some moult around the head as is a female August 4, and another bird from Hollandia in mid-September. These birds seem very close in color to typical *ferrugineus* although to me at least they appear darker than *holerythrus* from Japan and darker and more rufous than *clarus*. I merely follow Rand (1942) in assigning them to *heurni*.

Wing ♂ 133, ♀ 136, ♂ 136; weight ♂ 99, ♀ 102 g.

NEOSITTIDAE, AUSTRALIAN NUTHATCHES

Daphoenositta miranda frontalis van Oort

Two specimens were taken on the plateau west of the Ilaga Valley at 12,000 feet. They were together, evidently a pair, and were high up in a patch of moss forest trees in a small gully in the tundra-like plateau.

Soft parts: (♂ = ♂) iris dark brown, bill black, feet grayish brown, (♀ = ♀) iris pale yellow, bill black, base of lower mandible gray, feet orange yellow.

Wing (♂ = ♂) 86; weight (♂ = ♂) 14, (♀ = ♀) 12 g.

Ilaga Dani name, "geenabe;" Uhunduni, "imoutip."

Not previously recorded from the Nassau Range.

CERTHIIDAE, TREE CREEPERS

Climacteris placens inexpectata Rand

This is a slightly variable population, the forehead of several of these specimens being slightly darker than *inexpectata*, approaching *steini*. In the gray tone of the rump and tail, however, as well as in general tone of coloration, these birds are very close to Rand's race from Mount Wilhelmina. Our specimens were not in breeding condition nor did they show signs of moult.

Wing ♂ 89, ♀ 80-83; weight ♂ 12, ♀ 16-18 g.

MOTACILLIDAE, WAGTAILS

Motacilla cinerea caspica (Gmelin)

Found on Waigeu and in the Swart and Baliem Valleys. Our specimens weighed from 16 to 20 grams.

Motacilla flava simillima Hartert

Two specimens of this Wagtail from Waigeu taken in October, 1955, make the third record for this species in New Guinea which has been found previously only on the Mimika River and at Jelfio south of Sorong (Gyldenstolpe, 1955B).

NECTARINIIDAE, SUNBIRDS

Nectarinea sericea mariae Ripley

Kofiau Island, (Ripley, 1959B). This is a well-marked form, the male with a strongly violet throat, the female intermediate between the pale *auriceps* and the darker *cochrani*.

Nectarinea sericea cochrani Stresemann and Paludan

A female from Misool is paler above and below than typical *sericea*.

Wing 51; weight 9 g.

Nectarinea sericea sericea Lesson

Found at Arar and on Humboldt Bay. Two young birds with dull greenish-gray throats were taken in July and a male just beginning to assume iridescent plumage on the sides of the throat and mid-back, December first. Adults and juveniles weighed 9-10 grams and the youngest July juvenile 6 grams.

Nectarinea jugularis frenata (Müller)

Collected on Kofiau, Misool, Waigeu and on New Guinea from Arar east to Humboldt Bay. These birds were found in village gardens, scrub and forest edges usually fairly near the sea. Breeding condition males were taken in January, April and October. A juvenile male not long out of the nest was taken at Poee in September, and a well-grown juvenile male was collected on Misool in December.

Wing ♂ 53.5-58; weight ♂ 9, ♀ 9, 9.5 g.

MELIPHAGIDAE, HONEY-EATERS

Timeliopsis griseigula griseigula (Schlegel)

Found at Bodim and on the Tami River in substage trees, well up from the ground. There is a certain variation in the orange-brown to dull ochre-brown wash on the underparts, and the olive-brown to more warm-brown color of the upper surface. Males were in breeding condition in late July to August 4, presumably the end of a breeding season. The only female was not in breeding condition. One male, August 2, appears to be a juvenile, resembling the adult in color, but smaller in all proportions.

Wing ♂ 95-98, ♀ 91; weight ♂ 37-43, ♀ 34 g.

Timeliopsis fulvigula montana Mayr

A male from the Ilaga, August 31, extends the range of this form to the Nassau Mountains.

Wing 77; weight 22 g.

Glycichaera fallax poliocephala Salvadori

A pair of this small brightly colored form from Misool in November shows no sign of breeding activity.

Wing ♂ 60, ♀ 61; weight ♂ 11, ♀ 12 g.

Glycichaera fallax fallax Salvadori

Found at Bodim, where a male in breeding condition was collected July 29, and also in the Humboldt Bay area. Poee males had enlarged gonads in October and two juvenile birds with soft gapes were taken in July and October.

Wing ♂ 62, 65, 66, ♀ 60; weight ♂ 12, 18, ♀ 11 (2) g.

Oedistoma pygmaeum pygmaeum Salvadori

A female from Poee October 5 is our only record of this uncommon species. Wing 42.

Myzomela eques eques (Lesson)

Found on Misool and at Arar. The Arar female, December 5, is in breeding condition. A November 20 male on Misool is coming into breeding condition.

Wing ♂ 70.5, ♀ 59, 60; weight ♂ 16, ♀ 12, 12 g.

Myzomela eques primitiva Stresemann and Paludan

Males of this weakly-defined subspecies found at Bodim were coming into breeding condition in early August. We also secured an immature bird August 1 with paler coloration.

tion below and a dull reddish wash on forehead and cheeks as well as a poorly defined gular streak. Two specimens at Bodim August 1 and 5 are in heavy moult. Presumably, then, this late July-early August period marks the conclusion of nesting, beginning of moult, whereas in western New Guinea and adjacent islands breeding comes several months later.

This species was active at flowering trees of all sorts, feeding on the fig species in the substage with flowers as well as fruit growing out of the tree trunk, as well as large canopy trees such as the Myrtaceae.

Wing ♂ 68-71, ♀ 59, 60; weight ♂ 15-17, (juv. ♂) 18, ♀ 15 g.

Myzomela nigrita meyeri Salvadori

A single male with slightly enlarged gonads was taken at Bodim in a flowering tree August 5, along with *M. eques*.

Wing 61; weight 11 g.

Myzomela rosenbergii rosenbergii Schlegel

Extremely common in the forest up to 8400 feet. Males were in breeding condition in the Ilaga in late August up to September 9 although females were not, leading us to suppose that the nesting season had recently finished. This was substantiated by the presence of juvenile birds taken September 2 and 4. Unfortunately, although Jusup Khakiaj collected a large series in the Baliem, his data is inadequate so that we cannot date correctly the moulting birds and immature birds in the series. Among them a male is said to be in breeding condition in March.

Wing ♂ 62-65, ♀ 58.5-61; weight ♂ 9-14, ♀ 10, 14 g.

Grand Valley Dani name, "husinak."

Toxorhamphus novae-guineae novae-guineae (Lesson)

Near flowering trees in heavy forest this honey-eater was locally common. Once or twice I heard them make chattering noises when other birds were in the vicinity, perhaps a threat or warning call. Males were in breeding condition on Misool November 11, 12, and a female with granular ovaries was taken November 22. At Bodim males and females were similarly in breeding condition in early August, although by no means universally so. Of four males at Bodim only one had slightly enlarged gonads. Of three females only one had granular ovaries. Some moult (presumably post-breeding) was present on Misool in November, at Bodim in August.

Wing ♂ 67-71, ♀ 55-59; weight ♂ 11-14 (13), ♀ 9-12 (10.5) g.

Toxorhamphus iliolophus iliolophus (Salvadori)

Males were in breeding condition in August at Bodim, and slightly so at Poei in October, but no females were in breeding condition at this time, presumably late in the season for these birds. Some head moult was occurring in mid-October.

Wing ♂ 62-64.5, ♀ 59-60; weight ♂ ♀ 12-14 g.

Melilestes megarhynchus stresemanni Hartert

Two females were taken in bird nets in heavy forest at Bodim. One, August 2, is in wing moult.

Wing ♀ 93; weight 36, 37 g.

Melipotes fumigatus goliathi Rothschild and Hartert

Found commonly in the Ilaga forest and the Baliem from 4500 to 7500 feet. Some males were in breeding condition August 23-27, but no females were in breeding condition, and nestlings and juveniles were secured so that this is evidently the end of the nesting season. Nestlings and juveniles are more uniformly gray below without the distinctive chest band or paler edges to the abdomen feathers. September birds were very worn.

Soft parts: iris brown, ocular skin orange-yellow, bill black, feet dark gray, (nestling or juvenile) greenish-black to black, pads dull yellow. Wing ♂ 115-125 (121), ♀ 108-116; weight ♂ 58-77 (67), ♀ 50-59 (55) g.

Melidectes nouhuysi (van Oort)

A male in breeding condition and two females were taken in low scrub above the forest at 11,000 feet on the plateau west of the Ilaga. In comparing with *Paramythia* and *Pachycephala*, these birds were in worn plumage, moulting in new rectrices on September 5.

Soft parts: iris dark brown, ocular skin yellow, bill and feet black. Wing ♂ 133, ♀ 122, 125.5.

First record for the Nassau Range.

Melidectes belfordi kinneari Mayr

I follow Rand (1942) in assigning the Ilaga population to *kinneari*, although as Junge (1953) points out, there is considerable variation in bill size between the Utakwa and Oranje Mountain birds. This species of large honey-sucker was far more scarce in the forest of the Ilaga than *Melipotés* or *Ptiloprora*, although it occurred up to 10,700 feet, nearly the range of *nouhuysi*. However, it is a forest bird, of the substage, and surprisingly inconspicuous considering its jay-like size and querulous, rasping call. All our specimens are out of breeding condition and several are in worn plumage, renewing rectrices or remiges in late August. A juvenile female agrees well with the plumage description of Mayr and Rand (1937) for the nestling of *belfordi*. In general the plumage is similar to the adult but with less defined pattern, i.e. less or no edgings to the feathers of the back and underparts. The moustachal streaks are present but reduced, and there is a trace of seal-brown on the rump.

Soft parts: iris brown, ocular skin violet blue, lower eyelid yellow, yellowish-green or greenish yellow (in the juvenile the ocular skin is greenish), bill black (there is a yellow gape in the juvenile), feet ♂ brownish-gray, ♀ brownish-gray to dark gray to blackish-brown (juvenile, brown). Wing ♂ 134-147.5, ♀ 130-138; weight ♂ 59-73, ♀ 51-56, juv. 49 g.

Ilaga Dani name, "aionga."

Melidectes torquatus mixtus Rand

Very common in scrub and forest edges in the Baliem. Birds were in moult in March. A juvenile bird (no date) is colored similarly to the adult.

Wing ♂ 118-126, ♀ 109-118.

Swart Dani name, "nggwigok."

Oreornis chrysogenys van Oort

This is an uncommon mountain honey-sucker being known only from three specimens in Leyden taken by Lorentz and Versteeg, and twelve in New York from the Wilhelmina-Habbema area taken by the Archbold Expedition. We secured a pair in the Ilaga in mountain forest clearings and scrub at 8000 feet. The gonads of the male were slightly enlarged, but both birds were in slightly worn plumage and presumably going into post-breeding moult. Sexual dimorphism in size is pronounced as the following measurements show:

Wing ♂ 144, ♀ 126.5; tail ♂ 137.5, ♀ 123; culmen ♂ 27, ♀ 25; weight ♂ 77, ♀ 62 g. Of necessity this species had not previously been recorded from the Nassau Range.

Oreornis subfrenatus melanolaema (Reichenow)

Although Rand (1942) suggested that Weyland Mountain birds should probably be separated from those of the Oranje Mountains, Junge (1953) did not follow this up, and I am inclined to agree that the color of the upperparts is subject to considerable variation. Two females taken August 22 show no sign of breeding activity or moult.

Wing 94, 96.5; weight 30, 33 g.

Xanthotis chrysotis austera Ripley

Found on Misool (1957), a pair have wing measurements of ♂ 96, ♀ 92, and weighed ♂ 49, ♀ 38 g.

Xanthotis chrysotis meyeri Salvadori

This large dark honey-eater was common in heavy undergrowth from Bodim east to Humboldt Bay. There seems to be considerable variation in the lightness or suffused quality of the dark olive-brown back, but the crown of all these specimens is very blackish. Below there is some tendency to faint fulvous or grayish tips to the breast feathers. Otherwise the throat is grayish and the rest of the underparts dark buffy-brown. The orange-gold auricular patch is variable in size, paler or darker, sometimes almost absent.

Males were in breeding condition at Bodim the end of July, but no females were in similar condition and other specimens at the same time were moulting the rectrices. A female was moulting flight feathers at Poee in October. A specimen was brought in to Miss O'Brien in the Swart Valley in August.

I cannot see the necessity of maintaining the race *philemon* Stresemann.

Wing ♂ 98-106, ♀ 94-100; weight ♂ 47-54, ♀ 40-45 g.

Swart Dani name, "lawlomambangga."

Xanthotis polygramma kuehni Hartert

A rather brightly colored form with a prominent yellow ear patch and a narrow but distinct sub-ocular black stripe. The head feathers are dull greenish-olive with darker shaft lines and white tips on the nape. There are moderately broad yellow edges to the back feathers. Found high up in heavy forest on Misool. A male was in breeding condition in January.

Soft parts: iris dark brown, ocular skin orange-yellow, auricular area pinkish flesh, bill black, feet gray. Wing ♂ 71, 76; weight 20 g.

Xanthotis polygramma poikilosternos Meyer

Two specimens from Bodim probably belong to this subspecies. Both have somewhat greenish-olive crowns, but reduced edging to the back feathers, small yellow auricular patches and a dull yellowish wash on the underparts shading to fulvous on the flanks. Iredale (1956) has introduced the genus *Mundavis* for the species *polygramma*, unnecessarily I believe.

Wing ♀ 70.5, ♂ (= ♂) 75; weight ♀ 19, ♂ (= ♂) 25 g.

Swart Dani name, "nggin."

Meliphaga virescens sonoroides (Gray)

This inhabitant of coconut plantations, usually on offshore islets, is the familiar New Guinea larger honey-eater to most visitors to New Guinea, being tame and ubiquitous wherever found. Two specimens from Kamoia Island in the Schildpad group near Misool where I first encountered the species in 1937, and a female from Jarsoen, one of the Podena Islets east of Sarmi, leased by Mr. Foerster, one of the veteran copra planters of the New Guinea coast, comprise our series. No specimens are breeding, but one male from Kamoia is in moult in February. Wing ♂ 110, ♀ 98.

Meliphaga aruensis sharpei (Rothschild and Hartert)

Males with enlarged gonads were taken in late June and October in the Humboldt Bay area, and on Misool in late November. However, no females were in breeding condition. At Poee and Holtekong birds were in very worn plumage and commencing moult in late September and October. Long yellow auricular tufts and stout bills characterize this species found as high as the Swart Valley.

Wing ♂ 73-93 (80), ♀ 71-87 (76); culmen ♂ 18.5-21.5; weight ♂ 22-28, ♀ 21-29 g.

Swart Dani name, "luwutga."

Meliphaga analoga analoga (Reichenbach)

Found on Misool and Waigeu as well as Bodim and the Hollandia area. Males were in breeding condition in January and November (western islands), and June 29 and August 4 on the Tami River, and at Bodim. No females were in breeding condition, and no specimens were in moult.

Wing ♂ 79-83, ♀ 74-82; culmen ♂ 22-24; weight ♂ 22-25, ♀ 19, 22 g.

I am grateful to Dr. Salomonsen for aid in identifying part of this series which I find difficult to separate from *aruensis* in general. The impression of a longer, more slender bill and reduced auricular tuft, seem to provide the main criteria for separating these forms in the hand. I find no field characters by which to do so.

Ptiloprora meekiana occidentalis Rand

Two females from the Ilaga at 7500 feet extend the range of this subspecies west to the Nassau Range. This species was locally uncommon.

Wing 76, 77.5; weight 20, 21 g.

Ptiloprora erythropleura dammermani Stresemann and Paludan

A single male from the Baliem was collected by Jusup Khakiaj December 1, 1961. The specimen is moulting the rectrices. Wing 84.

Ptiloprora perstriata lorentzi (van Oort)

As Gilliard and Lecroy have reiterated (1961), it is probably wiser to keep the species *perstriata* and *guisei* separate, as the ranges may well overlap in the central mountains of western Papua. Our specimens from the Ilaga are typical *lorentzi* and were secured between 7500 and 7800 feet. The species undoubtedly ranges at least 1000 feet higher. Some males still had rather enlarged gonads between August 23 and 27 although going into wing and tail moult. Greenish-colored immatures were collected between August 19 and September 9. These birds had soft pale gapes and one juvenile, September 6, is not long out of the nest.

Soft parts: iris green, grayish-green, yellowish-green, jade green, greenish-gray, juv. brown, bill black, feet bluish-gray, gray, juv. grayish-brown.

Pycnopygius stictocephalus (Salvadori)

Three specimens worn and moulting were taken at Arar December 3, and at Poee September 30 and October 15. All were in secondary scrub forest.

Wing 97, 100, 107; weight ♀ 41 g.

Pycnopygius cinereus marmoratus (Sharpe)

A pair from the Baliem (where it was not met with by the Archbold Expedition) include a male with enlarged gonads in March. Apparently an uncommon species everywhere it occurs. Wing ♂ 101, ♀ 100.

Pycnopygius ixoides proximus (Madarász)

Two males were taken in thickets in heavy forest at Bodim July 26 and August 1. The August specimen is in moult. Both have some gonadal enlargement.

Wing ♂ 88, 93; weight 26, 31 g.

Philemon meyeri Salvadori

Males had somewhat enlarged gonads at Bodim in late July and early August. No females showed sexual activity. By September birds from Hollandia were in heavy moult, although individual birds in late June and July were moulting the rectrices or remiges. Thus moult would appear to occur irregularly in late June and July, becoming pronounced by September.

Wing ♂ 106-110, ♀ 102 (im.)-104; weight ♂ 46-52, ♀ 46-49 g.

Philemon novaeguineae novaeguineae (Müller)

Taken on Misool and Waigeu. A Misool male is in breeding condition in February, although the wing feathers are being replaced.

Soft parts: iris light brown, bill black, feet black, pads dull yellow.

Wing 150-154, ♀ 132; weight ♂ 162 g.

Philemon novaeguineae jobiensis (Meyer)

Breeding birds, both male and female were taken July 19 and August 11. Other individuals not in breeding condition, taken in July and September, are in moult. A nestling with a dark brown throat was taken at Wamena (no date), a new record for this altitude. Apparently the species is spreading in cultivated areas into the mountain valleys.

Wing ♂ 146-159, ♀ 145-156; weight ♂ 150, ♀ 120 g.

DICAETIDAE, FLOWERPECKERS

Dicaeum pectorale S. Müller

Found on Misool, Kofiau Island (the specimen was mislaid and unreported in my 1959B paper on the island), Waigeu and at Arar on Sele Strait. The Kofiau record is new for that island. Misool males and females were in breeding condition November 24, 25. Found in scrub as well as heavy forest.

Wing ♂ 48-50, ♀ 47 (2); weight ♂ ♀ 6-7 g.

Dicaeum geelvinkianum diversum Rothschild and Hartert

Collected at Bodim and Poe. A juvenile bird with an orange bill with black tip was taken at Poe in October. Two of the Poe birds are in body moult.

Wing ♂ 50-54, ♀ 47.5 (2), 48; weight ♀ 7 g.

Dicaeum geelvinkianum centrale Rand

Found on the Ilaga and in the Baliem. An Ilaga male was taken in dense forest at 7500 feet, making a characteristic "tick tick" call. The bird was in breeding condition September 8. In the more greenish color of the back it shows a relationship to *g. obscurifrons* Junge from the Wissel Lakes. A Baliem juvenile was taken in March, and a male was said to be in breeding condition in February. A February female is in extremely worn plumage. Perhaps this species has two nesting cycles in the central mountains.

Wing ♂ 55-58, ♀ 52-54; weight ♂ 7 g.

Melanocharis nigra nigra (Lesson)

A single male, iridescent black above, olive-gray below, was taken on Misool November 25. I noted the testes as somewhat enlarged. In my experience these are birds of scrub and heavy undergrowth, near flowering or fruiting trees, often fig species, betraying their presence by clicking calls.

Wing 61.5; weight 12 g.

Melanocharis nigra unicolor Salvadori

Breeding condition males were collected on the Tami River and at Bodim from June 30 through July. No females were in breeding condition and presumably this was the end of the season, as a juvenile with body down was collected July 29 at Bodim. One Bodim male of the same period has traces of olive feathers among the black underparts.

Wing ♂ 60-63, ♀ 60, 62; weight ♂ 9-12, ♀ 11 (2) g.

Melanocharis versteri meeki (Rothschild and Hartert)

Taken in the Ilaga in heavy forest from 7500 to 8000 feet. Several were taken in bird nets very low near the forest floor. A young male is indistinguishable in its plumage from females.

Wing ♂ 62, juv. ♂ 66, ♀ 67-72; weight ♂ 14, juv. ♂ 19, ♀ 18-21 g.

Salomonsen (1960) places this species in *Melanocharis* rather than *Pristorhamphus*.

Melanocharis striativentris axillaris (Mayr)

Salomonsen (1960) also combines *striativentris* in *Melanocharis* rather than *Neneba*, although the streaked underparts and lack of sexual dimorphism set this species well apart from its congeners. Three specimens, one somewhat juvenile in appearance with a pale gape (no date), were taken in the Baliem from whence the Archbold Expedition failed to meet the species. A male is in moult in February. Wing ♂ 71.5, ♀ 72.

Paramythia montium alpinum Salomonsen

In the Ilaga this species was common from 8000 to 12,000 feet, particularly in the alpine zone of scrub where clumps of bushes or low trees occurred scattered through open heath. A juvenile bird, largely gray below, though with a black throat and pale, whitish-yellow underparts, was taken September 9. Breeding birds were taken in early September including a female with enlarged ova in the ovary. These specimens agree with the upper size limit of the Mount Wilhelmina series collected by Rand and his colleagues (1942) and therefore agree with the altitudinal subspecies *montium* proposed by Salomonsen (1961).

Wing 8♂♂ 112-120 (115.2), 9♀♀ 104-117 (108.8) Salomonsen (*op. cit.* 1961) gives the following measurements for *alpinum*, the larger form found above 2200-2500 meters (7216-8200 feet) in the Oranje Range: Wing 8♂♂ 114-123 (116.8), 7♀♀ 108-120 (113.7). Thus our Nassau birds are slightly below the lower range for *alpinum* as well as the average of measurements, but the overlap is very great.

Weight ♂ 50, 54, 55, ♀ 45-50, 61 (1).

Ilaga Dani name, "gila;" Uhunduni, "elep."

ZOSTEROPIDAE, WHITE-EYES

Zosterops fuscicapilla fuscicapilla Salvadori

Collected in the Ilaga, Swart and Baliem Valleys. Small flocks of a dozen or so birds were often noticed in the Ilaga from 7000 to 8000 feet in scrub and eucalyptus-like trees round village settlements, occasionally in the tall casuarinas which lined paths or stood near houses. One September bird appears rather pale, grayish-olive below and may be a subadult bird. The black is slightly less pronounced on the head. A male is said to be in breeding condition in February. A fledgling was taken in the Swart in September.

Wing ♂ 57-60, ♀ 57-61; weight ♀ 13 (2) g.

Swart Dani name, "inolygena."

PLOCEIDAE, WEAVER FINCHES

Erythrura trichroa sigillifera (De Vis)

Two specimens were taken in the Ilaga. The male is curiously stained with blackish about the head, wing coverts and throat. Gyldenstolpe (1955A) noted this condition in a few of his Nondugl specimens. Perhaps this is an effect of wear. The male, September 12, has very worn remiges.

Wing ♂ 59.5, ♀ (?) 61.5; weight ♂ 15, ♀ (?) 15 g.

Ilaga Dani name, "uliwu" or "kuliipu."

Lonchura tristissima calaminoros (Reichenow)

Found on the Tami River and at Bodim in Papuan gardens, moving through clumps of cassava and other bushes. Rather shy and difficult to approach. On the Tami we found a nest (Plate II), hanging from the tip end of a rattan palm (*Calamus* sp.). The nest was about three feet in total height with an overhang porch roof over an entrance in the mid-area of the pear-shaped base, about three inches across. Local Papuans report that up to three weaver finches roost in such a structure at night (perhaps parents and one

young?). A juvenile female with light tips to the greater wing coverts was collected July 1 and adults in heavy moult were taken August 1 and 6.

Wing ♂ 48, ♀ 50; weight ♂ 10, ♀ im. 10 g.

Lonchura grandis destructa (Hartert)

Found in cane brakes and tall grass near Lake Sentani. Small flocks of six or eight would sometimes cross the road from one patch of cane or lalang to another, stopping for a moment on a swaying stem. None were nesting in July and August, and one July and one August specimen are in very worn plumage.

Soft parts: iris brown, bill gray, pale bluish-gray, feet slate, grayish-blue. Wing ♂ ♀ 54.5 (2), others worn; weight ♀ 13, 16 g.

Lonchura spectabilis mayri (Hartert)

One male is in breeding condition August 11, and a juvenile male was taken the same date. Otherwise our series from Lake Sentani is in non-breeding condition, nor do any seem to be in moult, although one or two have worn remiges. Found in cultivated areas.

Wing ♂ 45-47, ♀ 45; weight ♂ ad. and juv. 10 (2) g.

Lonchura castaneothorax sharpii (Madarász)

Two males from Sentani July 16 and 17 are in only slightly worn plumage and show no gonadal activity. Wing 46, 47.

Lonchura teerinki mariae, subsp. nov.

TYPE: ♂ ad. (YPM no. 76431), collected August 18, 1960 by S. Dillon Ripley at Bokindini, 4200 feet, Netherlands New Guinea.

DIAGNOSIS: from *teerinki* of the Grand Valley of the Baliem this form differs in the adult by the darker, blackish head, rather than chocolatey-black of the nominate form, as well as the deeper, richer color of the back. Below, these forms are approximately similar in comparing similar specimens of equivalent date. However, the black of the lower flanks, thighs and undertail coverts appears denser, more truly black.

In the immature plumage, Bokindini birds tend to be somewhat darker than typical *teerinki*. Once the darker brown head feathers start to be replaced by the adult black, the difference becomes striking. The black of *mariae* is a true black rather than chocolatey-black.

This small finch attracted our attention flying in and out in flocks, over the palisade of the mission station of our hosts, Mr. and Mrs. Garnet Erickson, making typical low one-note *Lonchura* calls. It was not until later that I realized that this was the species *teerinki* known only from the Grand Valley. Immatures in various states of change from juvenile to adult plumage were among the flocks on August 18.

Wing ♂ ♀ 48-52.

Named for my wife, Mary Livingston Ripley.

Lonchura teerinki teerinki Rand

Common at Kurulu and Wamena. Adults and immatures in all states of plumage were collected in February, March, August and September. An August 20 male from Kurulu is said to be in breeding condition, as is another male in March.

Wing ♂ ♀ 47-52.

Grand Valley Dani name, "iburu."

Lonchura monticola montana Junge

This species was common in the cultivated fields of the Ilaga from 7000 to 7500 feet. Birds were eating weeds and grass seeds, flying in closely-packed flocks from field to field, or perching in lalang grass, or trees near cultivation. These specimens are similar to *Wilhelmina* birds, but many have straw-edged rectrices, a character not noted by Rand. The black band also is variable in extent. Many of our birds, but not all, have

darker breasts than *Wilhelmina* birds, more blackish heads without the brown ear coverts, and heavier, coarser barring on the flanks. These characters, however, seem to vary too much in series to warrant separation of the population from that of the Oranje Range.

Only the brown breast in the adult really distinguishes this form from *monticola* which it replaces geographically, and I can see no sound reason for maintaining two separate species. In addition the immature plumage is very similar, our immatures have the pale, buffy brown undertail coverts of *monticola* and both forms have gray breasts as immatures. Rand (1942) lists the *Wilhelmina* immatures as having black undertail coverts, evidently a later chronological stage towards the assumption of adult plumage.

Our male specimens were in breeding condition between August 18 and 27. None of the females were in similar condition, so that I believe the season had concluded earlier. Juveniles were much in evidence.

Soft parts: iris brown, juv. light brown, bill whitish or pale gray, juv. black, feet gray, juv. brown. Wing ♂ 52-55, ♀ 51-55.5; weight ♂ ♀ 14-17 g.

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PLATE I

- Top. Hollandia Bay from Holtekong looking west towards Sentani. Mrs. Ripley and Jusup Khakiaj with cassowary chick.
- Middle. Ilaga River, 7000 feet. Dani rattan and wood bridge.
- Bottom. Dani village dancing area, 7500 feet. Casuarina and pandanus trees in background, looking southwest towards upland plateau trail to west Baliem at 9000 feet.





PLATE II

- Top Left. Nest of *Lonchura tristissima*. See text, p. 73
- Top Right. Sirikena at the Moasets bivouac (560 m altitude = c. 1800 ft), Lower Mamberano River. Collection of *Megapodius* and *Talegalla* eggs. See text, p. 20
- Bottom Left. Lowland forest with slash cultivation of cassava and plantain in foreground. Bodim, 300 feet altitude.
- Bottom Right. Uhunduni hunter with stone ax, Ilaga 7500 feet.